UCRL-AR-119569

**Environmental Protection Department**
*Operations and Regulatory Affairs Division*

# Contingency Plan for Hazardous and Mixed Waste Retention Tank Systems

**February 1995**

**Dawn Chase**
**Sav Mancieri**

**Lawrence Livermore National Laboratory**
*University of California • Livermore, California 94551*

UCRL-AR-110233,

**Environmental Protection Department**
*Operations and Regulatory Affairs Division*

# Contingency Plan for Waste Accumulation Area Building 113

**July 1994**

**Dawn Chase**

**Bob Felicitas**

**Lawrence Livermore National Laboratory**
*University of California • Livermore, California 94551*

Work performed under the auspices of the U.S. Department of Energy by Lawrence Livermore National Laboratory under Contract W-7405-ENG-48.

# Contents


**1. INTRODUCTION ..... 1**
1.1 Scope of the Plan ..... 2
1.2 Implementation of the Plan ..... 2
1.3 Maintenance of the Plan ..... 4
1.3.1 Copies of the Contingency Plan ..... 4
1.3.2 Revisions of the Contingency Plan ..... 5

**2. RESPONSIBILITIES ..... 5**
2.1 Emergency Coordinator ..... 6
2.2 Waste Retention Tank System Operator ..... 7
2.3 Environmental Duty Officer ..... 8
2.4 Environmental Operations Group Analyst ..... 8
2.5 Tank Assessment and Guidance Group Analyst ..... 9
2.6 Support Organizations ..... 9
2.6.1 Environmental, Safety, and Health Team ..... 9
2.6.2 Technician Support ..... 10
2.6.3 Environmental Monitoring and Analysis Division ..... 10
2.6.4 Hazardous Waste Management Division ..... 10
2.7 Lawrence Livermore National Laboratory Fire Department ..... 11

**3. ARRANGEMENTS WITH LOCAL AUTHORITIES ..... 11**

**4. EMERGENCY CONTROL PROCEDURES ..... 12**
4.1 Lawrence Livermore National Laboratory Sitewide Emergencies ..... 12
4.2 Emergency Situations ..... 13
4.2.1 Fire or Explosion ..... 13
4.2.2 Earthquakes ..... 13
4.2.3 Power Outages ..... 14
4.2.4 Waste Release from the Waste Retention Tank System ..... 15
4.2.4.1 Procedures to Stop and Contain Waste in the Event of a Small Incident ..... 15
4.2.4.2 Procedures to Stop and Contain Waste in the Event of a Large Incident ..... 16
4.2.4.3 Removal of Liquids in Secondary Containment ..... 17
4.2.4.4 Equipment Failure ..... 19
4.3 Decontamination ..... 19
4.3.1 Waste Retention Tank System Decontamination Activities ..... 19
4.3.2 Lawrence Livermore National Laboratory Fire Department Decontamination Activities ..... 19
4.4 Notification to the Department of Energy and Regulatory Agencies ..... 19

**5. EMERGENCY EQUIPMENT ..... 20**
5.1 Communications Systems ..... 21
5.2 Fire Suppression Systems ..... 21
5.2.1 Fire Extinguishers ..... 21
5.2.2 Water Supplies ..... 21
5.3 Response Equipment ..... 21
5.3.1 Spill Response Equipment ..... 22

5.3.2 Response Vehicles and Heavy Equipment ..... 22
5.4.3 Material Safety Data Sheets ..... 23
5.4 Decontamination Equipment ..... 23
5.5 Testing and Maintenance of Equipment ..... 23

**6. EVACUATION PLAN ..... 25**
6.1 Evacuation Notification of Personnel ..... 25
6.1.1 Lawrence Livermore National Laboratory Evacuation Plan ..... 25
6.2 Evacuation Routes and Assembly Points ..... 25

**7. PERSONNEL TRAINING ..... 25**

**8. REFERENCES ..... 26**

**APPENDIX A**
Personal Protective Equipment Guidelines

**APPENDIX B**
Equipment to Contain and Absorb Spills

**APPENDIX C**
Waste Absorption and Neutralization Procedures

**APPENDIX D**
D-1 Waste Retention Tank System 141-R1
D-2 Waste Retention Tank System 141-R2
D-3 Waste Retention Tank System 141-R3
D-4 Waste Retention Tank System 406-R1
D-5 Waste Retention Tank System 490-R3
D-6 Waste Retention Tank System 611-O1

**List of Figures**
Figure 1. Waste Retention Tank Systems at Lawrence Livermore National Laboratory Main Site ..... 3

**List of Tables**
Table 1. Waste Retention Tank Systems at Lawrence Livermore National Laboratory Main Site ..... 2
Table 2. Emergency Call List of Duty Fire Chiefs ..... 6
Table 3. Participants in the Twin Valley Mutual Aid Agreement ..... 11
Table 4. Regulatory Agency Phone Contact List ..... 19

# List of Acronyms

| | |
|---|---|
| **ALCO-CMED** | Alameda County Medical Alert Plan–County Medical Emergency Dispatch |
| **ALCO-EMS** | Alameda County Medical Alert Plan–Emergency Medical Services |
| **AGOV/HEPA** | acid gases organic vapors/high-efficiency particulate air |
| **DOE** | Department of Energy |
| **DPM** | disintegrations per minute |
| **EAS** | Environmental Analytical Sciences |
| **EDO** | Environmental Duty Officer |
| **EMAD** | Environmental Monitoring and Analysis Division |
| **EOG** | Environmental Operations Group |
| **EPA** | Environmental Protection Agency |
| **EPD** | Environmental Protection Department |
| **ES&H** | Environmental, Safety, and Health |
| **H&S** | Health and Safety |
| **HEPA** | high-efficiency particulate air |
| **HWM** | Hazardous Waste Management |
| **LLIX** | Lawrence Livermore National Laboratory Information Exchange |
| **LLNL** | Lawrence Livermore National Laboratory |
| **MSDS** | Material Safety Data Sheet |
| **PCB** | polychlorinated biphenyl |
| **PPE** | personal protective equipment |
| **PVC** | polyvinyl chloride |
| **RCRA** | Resource Conservation and Recovery Act |
| **RMMA** | Radioactive Materials Management Area |

| | |
|---|---|
| **TAGG** | Tank Assessment and Guidance Group |
| **WAA** | Waste Accumulation Area |
| **WRTS** | Waste Retention Tank System |

# CONTINGENCY PLAN
# FOR
# HAZARDOUS AND MIXED WASTE
# RETENTION TANK SYSTEMS

## 1. INTRODUCTION

This Contingency Plan for Hazardous and Mixed Waste Retention Tank Systems is designed to prepare personnel to minimize hazards to human health and the environment from fires, explosions, or any sudden or nonsudden release of hazardous or mixed waste (hazardous and radioactive) constituents to the:

- Air
- Ground surface
- Water from waste stored in a hazardous or mixed waste retention tank

It outlines the responsibilities and procedures to be followed in the event of an emergency at a hazardous or mixed waste retention tank system (WRTS). This plan complements the existing Lawrence Livermore National Laboratory (LLNL) *Draft Emergency Plan*,[1] which can also be implemented as a result of major fires, explosions, or releases of hazardous or mixed waste.

The LLNL Main Site has six hazardous or mixed waste retention tank systems that are a combination of aboveground and/or underground storage tanks and all associated sumps and piping. These WRTSs are identified in **Table 1** and shown in **Figure 1**. WRTSs are used to collect and store four different types of wastewater including hazardous, nonhazardous, mixed, and radioactive. For the purpose of this document, a WRTS will only refer to hazardous and mixed waste retention tank systems, and hazardous or mixed waste is referred to as waste. They are used to accumulate waste for up to 90 days, after which it must be transferred to a permitted treatment, storage and disposal facility.

This Contingency Plan is divided into two parts:

1. The first part, referred to as the "General Plan," is general information that is applicable to all six WRTSs. The General Plan includes Section 1–8 and Appendices A–C.

2. The second part, referred to as the "Site-Specific Plan," contains site-specific information for each of the six WRTSs. Each of the Site-Specific Plans are included in Appendix D.

A copy of the Contingency Plan (including all six Site-Specific Plans) will be distributed to regulatory agencies and to selected public service organizations, such as local fire departments and hospitals. A copy of the General Plan with the appropriate Site-Specific Plan will be located at each WRTS, so it can be used in the case of an emergency.

**Table 1. Waste Retention Tank Systems at Lawrence Livermore National Laboratory's Main Site.**

| WRTS No. | Program/ Department | ES&H Team* | Description | Contents | Appendix No. |
|---|---|---|---|---|---|
| 141-R1 | Engineering | 3 | Two 1,500-gal, fiberglass, single wall, bermed | Rinsewater containing trace solvents and metals | D-1 |
| 141-R2 | Engineering | 3 | Two 500-gal, fiberglass, single wall, bermed | Rinsewater containing trace solvents and metals | D-2 |
| 141-R3 | Engineering | 3 | Two 1,500-gal, fiberglass, single wall, bermed | Rinsewater containing trace solvents and metals | D-3 |
| 406-R1 | Environmental Protection | 4 | One 1,000-gal, carbon steel, double wall | Recovered gasoline from groundwater | D-4 |
| 490-R3 | Lasers | 2 | One 180-gal, stainless steel, single wall, vaulted | Rinsewater containing trace solvents and metals | D-5 |
| 611-O1 | Services and Distribution | 4 | One 1,000-gal, fiberglass, double wall | Waste motor vehicle oil | D-6 |

***Environmental, Safety, and Health Team**

## 1.1 Scope of the Plan

This Contingency Plan identifies personnel responsibilities, emergency equipment, and required actions necessary to mitigate incidents at the WRTSs. It is intended to prepare personnel for potential emergencies.

This Contingency Plan specifically defines the types of incidents that can be handled by trained LLNL personnel and those that must be mitigated by the LLNL Emergency Management Division (referred to hereafter as the LLNL Fire Department). This is accomplished by classifying the particular incident in accordance with the levels described below.

## 1.2 Implementation of the Plan

Provisions of this Contingency Plan are intended to minimize hazards to human health and the environment from fires, explosion, or any release of waste to the air, soil, or surface water from waste stored in the WRTSs. This Contingency Plan is implemented whenever a large incident occurs.

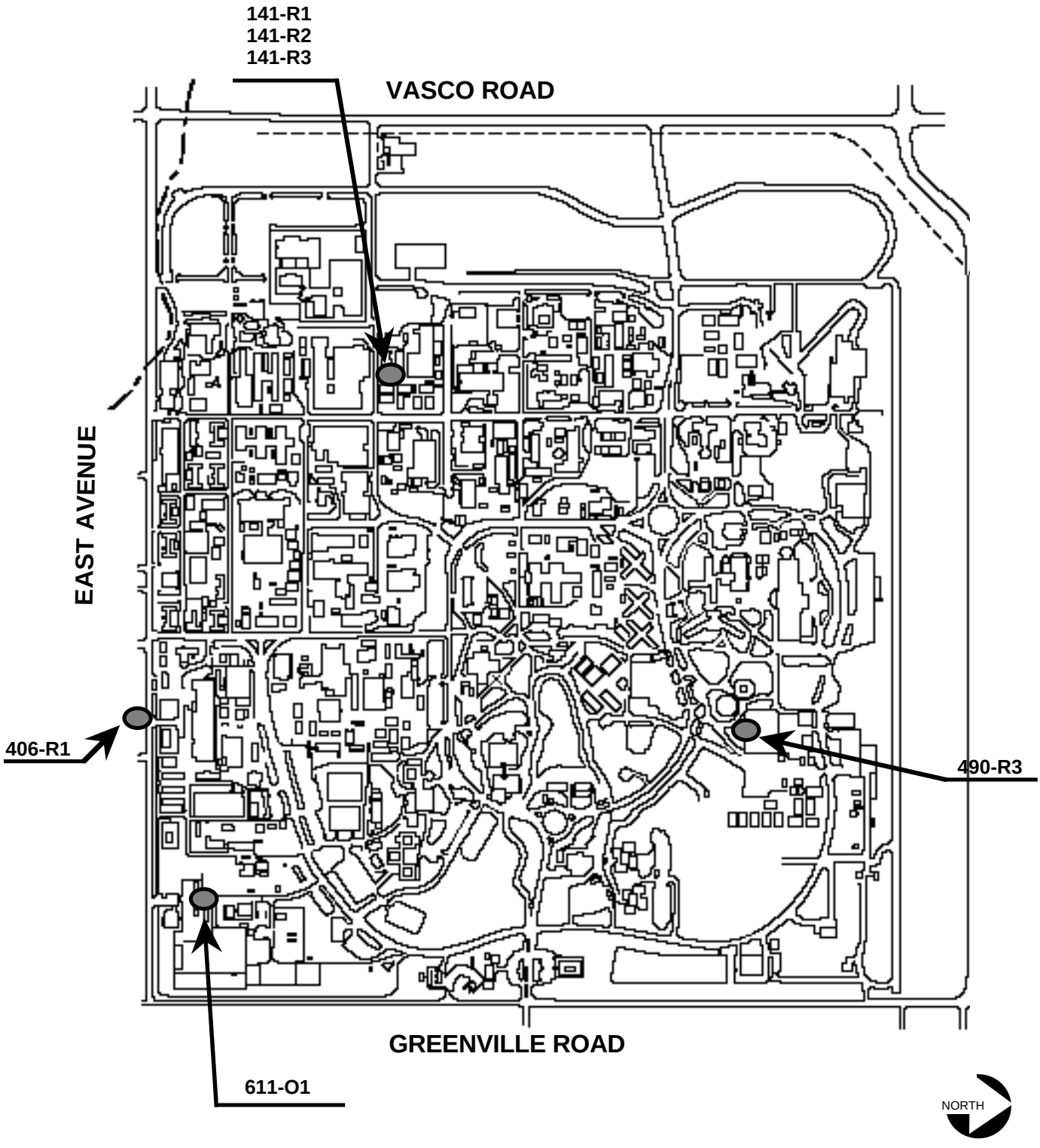



**Figure 1. WRTSs at LLNL Main Site.**

Incidents are characterized as either small or large. An incident is characterized as small if it meets *all* of the following conditions:

- The release is of a material whose nature and potential hazards are known.
- The release presents no actual or potential threat to human health or the environment.
- The release can be cleaned up by one or two people in less than one hour.
- The incident results in no injury or in a minor injury requiring simple first aid.

Small incidents are handled routinely by trained LLNL personnel with some support or assistance from the Hazards Control Department or the Environmental Protection Department (EPD). The Environmental Operations Group (EOG) Analyst is notified in the event of any small incident during normal working hours. The Environmental Duty Officer (EDO) is notified during off-hours.

The LLNL Fire Department must be called when a large incident occurs. An incident is considered large *if any one or more* of the following conditions occur:

- A fire or explosion ocurrs.
- Personnel regard the incident as unsafe to manage without the aid of the LLNL Fire Department.
- Hazardous or mixed waste with hazards unfamiliar to personnel is released.
- Hazardous or mixed waste that cannot be identified is released.
- Hazardous or mixed waste that cannot be cleaned up by two people in less than one hour is released.
- There are injuries that require medical treatment other than simple first aid.
- The incident requires evacuation of a building or facility.
- Hazardous or mixed waste migrates into a storm drain or sanitary sewer drain.

## 1.3 Maintenance of the Plan

### 1.3.1 Copies of the Contingency Plan

A copy of the General Plan and the appropriate Site-Specific Plan will be maintained onsite at the WRTS and in the WRTS Operator's files.

A copy of the General Plan with all six Site-Specific Plans shall be maintained onsite at:

- LLNL Fire Department (Building 323)
- Environmental Operations Group (Trailer 5475)

- Tank Assessment and Guidance Group (Trailer 5475)
- Environmental Permits and Regulatory Affairs Group (Trailer 5475)
- Emergency Management Center (Building 313)
- LLNL Health Services Department (Building 663)
- Safeguards and Security Department, Assurance Office (Building 271)
- Hazards Control Department (Building 253)

A copy of the General Plan with all six Site-Specific Plans shall be provided to all participants in the Twin Valley Mutual Aid Agreement (see Section 3, **Table 3**). A copy of this General Plan with all six Site-Specific Plans will also be provided to the Valley Care Medical Center in Pleasanton, California.

### 1.3.2 Revisions of the Contingency Plan

This Contingency Plan shall be reviewed annually by the applicable program/department, LLNL Fire Department, Emergency Preparedness and Response Program, Hazards Control Department, and EPD. The EOG Analyst shall be informed immediately if *any* of the following occur:

- The Contingency Plan, if properly followed, fails in an emergency.
- There is a change in WRTS design, construction, operation, or maintenance in a way that either:
  - Increases the potential for fires, explosions, or releases of waste or waste constituents.
  - Changes the response necessary in an emergency.
- The list of Duty Chiefs (Emergency Coordinators) changes.
- The list of emergency equipment changes.
- Types of waste stored changes.
- Applicable regulations are revised.

EPD will coordinate the annual review of the Contingency Plan. An amended plan will be distributed to all appropriate internal departments and external agencies.

## 2. RESPONSIBILITIES

This section identifies the responsibilities of the Emergency Coordinator, WRTS Operator, EDO, EOG Analyst, Tank Assessment and Guidance Group (TAGG) Analyst, support organizations, and the LLNL Fire Department.

## 2.1 Emergency Coordinator

The LLNL Fire Department Incident Commander fulfills the responsibilities of Emergency Coordinator as required by state and federal regulations. The Incident Commander coordinates all emergency responses for large incidents.

The LLNL Fire Department is contacted for all large incidents. The first senior Fire Department Officer dispatched to, or present at, the incident site becomes the Incident Commander until relieved by a Duty Fire Chief. The LLNL Fire Chief and the three assistant Fire Chiefs rotate the responsibility of Duty Fire Chief and remain on call for 24 hours a day on a weekly basis. The LLNL Emergency Dispatcher maintains a copy of the Emergency Call List of Duty Fire Chiefs (see **Table 2**).

The Incident Commander has the authority to commit LLNL resources and the capability to obtain outside resources needed to implement this Contingency Plan. The responsibilities of the Incident Commander are identified below. Some of these responsibilities can be delegated, as indicated.

**Table 2. Emergency Call List of Duty Fire Chiefs.**

| Name and Title | Extension/ Pager | Work Phone | L-Code | Home Phone | Home Address | Work Address |
|---|---|---|---|---|---|---|
| John Sharry, Fire Chief (Primary) | 37700/ 01800 | (510) 423-2481 | L-388 | (510) 373-1926 | 5116 Teresa Way Livermore, CA 94550 | 7000 East Ave Livermore, CA 94551 |
| John Loverin, Assistant Fire Chief (Alternate 1) | 37700/ 01802 | (510) 422-5243 | L-388 | (510) 294-8304 | 1865 De Vaca Livermore, CA 94550 | 7000 East Ave Livermore, CA 94551 |
| Ralph Burklin, Assistant Fire Chief (Alternate 2) | 37700/ 01803 | (510) 422-7958 | L-388 | (408) 475-3840 | 615 Burlingame Ave Capitola, CA 94010 | 7000 East Ave Livermore, CA 94551 |
| Jerry Sandoval, Assistant Fire Chief (Alternate 3) | 37700/ 01804 | (510) 422-7748 | L-388 | (510) 443-0797 | 5175 Irene Way Livermore CA 94550 | 7000 East Ave Livermore, CA 94551 |

*For assistance during off-shift hours, contact the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from cellular phone or pay phone. If paging from cellular phone or pay phone, dial 423-7705 and pager number.*

The Incident Commander shall:

- Assess the emergency conditions and initiate onsite response activities.
- Identify the character, exact source, amount, and extent of released material with the assistance of the EOG Analyst during normal working hours or the EDO during off-hours. The Environmental Analytical Sciences (EAS) Laboratory is available for performing chemical and radiological analyses.

- Assess possible hazards to human health with assistance from the Industrial Hygienist and/or Health Physicist. Assess possible hazards to the environment with assistance from the EOG Analyst during normal working hours or the EDO during off-hours.
- Ensure that all required notifications to outside agencies take place. Authority is delegated to the EOG or TAGG Analyst during normal working hours or the EDO during off-hours.
- Activate the LLNL Emergency Paging System to notify personnel in selected areas of LLNL or the entire LLNL population, if necessary. Initiate evacuation of personnel, if appropriate.
- Notify appropriate state or local agencies with designated response roles if their help is needed. Enlist support from agencies that participate in the Mutual Aid Agreement.
- Provide on-scene operational control for life safety, rescue, fire control and extinction, spill control and containment, and property conservation and salvage.
- Stop all waste-handling processes and operations in the area to prevent the occurrence, recurrence, and spread of fire, explosions, and waste releases.
- Ensure that monitoring is performed for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment.
- Ensure that recovered wastes, contaminated soil, or runoff water (from fire fighting, sprinkler systems, or broken water lines) are treated, stored, or disposed of in accordance with all applicable regulations. Authority may be delegated to the Hazardous Waste Management (HWM) Division.
- Ensure that waste that is incompatible with the released waste is not handled in the area of the release until cleanup is complete. Authority may be delegated to the EOG Analyst during normal working hours or the EDO during off-hours.
- Ensure that all emergency equipment is cleaned and stocked before operations are resumed. Authority may be delegated to the WRTS Operator.

## 2.2 Waste Retention Tank System Operator

The WRTS Operator or his/her designee is responsible for ensuring the system is operated safely and maintained properly, daily inspections are conducted, records of the inspections and maintenance activities are maintained, and corrective action is initiated. Each WRTS has an operator who is responsible for handling small incidents. The WRTS Operator is listed in each Site-Specific Plan. In the event of a small incident, the WRTS Operator shall:

- Assess conditions and make initial evaluation
- Safeguard personnel and visitors in the area of the WRTS
- Coordinate all response activities and measures

- Commit and direct the resources needed to mitigate the incident

During a large incident, the WRTS Operator shall:

- Assess conditions and make initial evaluation
- Safeguard personnel and visitors in the area of the WRTS
- Initiate immediate response activities (e.g., stop leak, place absorbent on released waste)
- Request help from the LLNL Fire Department and other support organizations

## 2.3 Environmental Duty Officer

The EDO is responsible for assisting the Incident Commander in making decisions regarding environmental issues. Designated EPD personnel who are certified as EDOs rotate the responsibility of EDO and remain on call 24 hours a day, on a weekly basis. During off-hours, the EDO is the point contact for environmental issues and has the option of calling the EOG Analyst for assistance. During normal working hours, the EDO shall:

- Assist the EOG Analyst assigned to support the program/department responsible for the WRTS
- Ensure the appropriate outside regulatory agencies are notified following EPD's Environmental Incident Notification and Reporting Procedure

During off-hours, the EDO shall assist the Incident Commander in making decisions regarding environmental issues. The EDO shall:

- Identify the character, source, amount, and extent of released material
- Assess the possible hazards to the environment
- Ensure that waste that is incompatible with the released waste is not handled in the area of the release until cleanup is complete
- Ensure the appropriate outside regulatory agencies are notified following EPD's Environmental Incident Notification and Reporting Procedure

## 2.4 Environmental Operations Group Analyst

The EOG Analyst supports the program/department responsible for the WRTS. During normal working hours, the EOG Analyst is the point contact for environmental issues. The EOG Analyst shall notify the EDO and a TAGG Analyst when an incident occurs in an area the analyst supports, and together they shall assess the possible hazards to the environment. During off-hours, the EOG Analyst supporting the program/department area may be called in to assist the EDO.

During normal working hours the EOG Analyst is responsible for:

- Identifying the character, source, amount, and extent of released material
- Assessing the impact of any waste release on the WRTS and the environment
- Ensuring that waste that is incompatible with the released waste is not handled in the area of the release until cleanup is complete

## 2.5 Tank Assessment and Guidance Group Analyst

The TAGG Analyst supports the program or department responsible for the WRTS. During normal working hours, the TAGG Analyst is the point contact for WRTS operational issues. The TAGG Analyst shall notify the EOG Analyst and the EDO when an incident occurs in an area the EOG Analyst supports, and together they shall assess the possible hazards to the environment. During off-hours, the TAGG Analyst supporting the program area may be called to support the EDO.

During normal working hours and in the event of a small incident, the TAGG Analyst has primary responsibility for:

- Notifying regulatory agencies, as needed, following EPD's Environmental Incident Notification Protocol
- Preparing documentation required for tank repairs or closure, and coordinating tank closure and removal operations, if necessary
- Assisting in tank tightness testing and preparing regulatory reports, if necessary
- Providing guidance and assistance in implementing the monitoring and leak detection plan, when necessary
- Providing guidance on proper operations of the WRTS

## 2.6 Support Organizations

### 2.6.1 Environmental, Safety, and Health Team

The ES&H Team Leader is notified in the event of a fire or explosion, major earthquake, or waste release that affects environmental regulatory compliance or poses significant health or safety hazards. Each WRTS has the support of an ES&H Team; they may be called at any time to assess possible environmental, safety, and health issues. Each ES&H Team consists of technicians (described in Section 2.6.2) as well as specialists in the following fields:

- Industrial hygiene
- Industrial safety
- Health physics
- Environmental protection

- Explosives safety
- Fire protection engineering and prevention

### 2.6.2 Technician Support

Other support personnel include the Health and Safety (H&S) Technicians and HWM Technicians. The H&S Technicians can assist in securing areas, and the HWM Technicians are available to pump out tanks and secondary containment areas and to assist in sampling and cleanup operations.

### 2.6.3 Environmental Monitoring and Analysis Division

The Environmental Monitoring and Analysis Division (EMAD) of EPD supports and assists LLNL organizations in conducting environmental monitoring of all media. When required, this division shall:

- Provide fixed and portable air monitoring and modeling to measure and predict airborne releases
- Perform monitoring and sample analyses of various other environmental media at the EAS Laboratory to assess the impact of the incident on the environment

In addition, EMAD is responsible for santiary sewer monitoring. The sanitary sewer monitoring equipment continuously monitors the pH, metals, and radiation content of LLNL sewage. If the monitoring system detects a level above detectable concentrations, the wastewater is automatically diverted to the LLNL sewer diversion facility. In the event of a release to the sanitary sewer, EMAD shall obtain grab samples, daily composite samples, and satellite monitoring samples for analyses.

### 2.6.4 Hazardous Waste Management Division

HWM has personnel and equipment available to support the LLNL Fire Department or program/department during an incident. HWM may:

- Assist in emergency pump out
- Assist in sampling and cleanup operations
- Assist in preparing the waste for offsite disposal
- Provide spill response equipment as described in Section 5.3.1
- Assist in control, containment, and decontamination under the supervision of the Incident Commander

## 2.7 Lawrence Livermore National Laboratory Fire Department

The LLNL Fire Department shall be contacted for large incidents. The LLNL Fire Department provides the first response and is responsible for invoking the Incident Command System. The LLNL Fire Department has the responsibility and authority as required by state regulations to be in charge of site management for incidents and to delegate authority to mitigate emergency situations. The LLNL Fire Department shall ensure the appropriate measures are taken to:

- Contain and control waste to protect personnel, the environment, and property from its effects
- Provide technical and operational coordination to return the site of the incident to normal

# 3. ARRANGEMENTS WITH LOCAL AUTHORITIES

LLNL has mutual aid agreements with several local authorities to provide assistance in the event of an emergency that cannot be handled by LLNL internal response measures. Through LLNL's participation in Mutual Aid Agreements, virtually all emergency response organizations in the local region can be accessed. A list of the primary local authorities that provide assistance through the Twin Valley (or East Zone) Mutual Aid Agreement is presented in **Table 3**.

**Table 3. Participants in the Twin Valley Mutual Aid Agreement.**

| Organization | Contact | Address | Phone |
|---|---|---|---|
| California Department of Forestry, Castle Rock and Sunol Stations | Morgan Hill Fire Dispatch | 15670 Monterey Street<br>Morgan Hill, CA 95037 | (408) 779-2121 |
| City of Livermore | Stewart Gary<br>Fire Chief | 4550 East Avenue<br>Livermore, CA 94550 | (510) 373-5461 |
| City of Pleasanton | George Withers<br>Fire Chief | 4444 Railroad Avenue<br>Pleasanton, CA 94566 | (510) 484-8114 |
| Alameda County Fire Department | William McCammon<br>Fire Chief | 1617 College Avenue<br>Livermore, CA 94550 | (510) 670-5850 |
| Dougherty Fire Authority | Karl Diekman<br>Fire Chief | 9399 Fircrest Lane<br>San Ramon, CA 94583 | (510) 829-2333 |
| Valley Fire Protection District, San Ramon | Mel Deardorff<br>Fire Chief | 1500 Bollinger Canyon Road<br>San Ramon, CA 94583 | (510) 838-6640 |
| Camp Parks | Calvin Hardy<br>Fire Chief | 636 Fifth Street<br>Dublin, CA 94568 | (510) 828-2057 |
| Veterans Administration Hospital | William Morgan<br>Fire Chief | 4951 Arroyo Road<br>Livermore, CA 94550 | (510) 455-7426 |

LLNL is also a signatory to an Automatic Aid Agreement with the City of Livermore Fire Department, which provides automatic response on a first-alarm basis.

The LLNL Fire Department provides emergency medical care during emergencies and transports the ill or injured either directly offsite or to the LLNL medical facility for further medical evaluation and care. LLNL operates under the Alameda County Emergency Medical Services (ALCO-EMS) Agreement Emergency Medical Plan protocols. The plan identifies base hospitals and trauma hospitals for each zone in Alameda County. Either Valley Memorial Hospital or Valley Care Medical Center will be the receiving base hospital.

The ALCO-EMS plan will be activated if medical service needs resulting from an incident will overwhelm the resources of a single ALCO-EMS zone. Each base hospital will coordinate emergency response within its zone and between other zones. An emergency dispatch system [Alameda County Medical Alert Plan–County Medical Emergency Dispatch (ALCO-CMED)] is in place to alert all hospitals in the plan. The LLNL Fire Department and Health Services Department have radio links with ALCO-CMED. ALCO-CMED will send ambulances to the disaster site, maintain the emergency rooms, and direct ambulances to the hospital emergency rooms. Air transportation via helicopter may be used if the overall time for transport to a hospital is at least 20 minutes less than ground transportation. Other hospitals will cancel routine services to prepare to receive patients.

In the event of an emergency, requests for outside assistance will be channeled through the LLNL Emergency Notification System, and outside authorities will be contacted via telephone or radio.

# 4. EMERGENCY CONTROL PROCEDURES

Response to an emergency at a WRTS is designed to be at a level appropriate to the incident. The transition from one level of emergency to another must be automatic and keyed to well-defined criteria. Incident levels are defined based on the event and the potential hazard to onsite personnel and offsite population. Guidelines for determining incident levels are established in Section 1.2. The appropriate procedures to follow in the event of specific emergencies are outlined in this section.

## 4.1 Lawrence Livermore National Laboratory Sitewide Emergencies

LLNL sitewide emergencies are addressed by the LLNL *Draft Emergency Plan* .[1]

## 4.2 Emergency Situations

### 4.2.1 Fire or Explosion

If a fire or explosion occurs, the incident is considered large, as described in Section 1.2. The WRTS Operator shall take the following actions in the event of a fire or explosion:

1. Dial extension 911 for the LLNL Emergency Dispatcher.
2. Identify his/her name.
3. Give the location of fire or explosion and any injured parties. Include building number, cross streets, and significant landmarks.
4. Indicate the nature of fire (i.e., what material is burning).
5. Give all other significant information that may help the LLNL Fire Department including:
    - Size of the fire
    - Materials at risk
    - Potential involvement of waste and other hazardous substances
    - Nature of injuries
6. Remain on the phone to verify the information given to the LLNL Emergency Dispatcher and receive further instructions.
7. Notify the Building Coordinator for the affected facility and the ES&H Team Leader, if possible.
8. Take appropriate actions to mitigate the emergency before the LLNL Fire Department arrives, including restricting access to the affected area and giving emergency aid to the injured.
9. Stand by or direct someone to meet the Fire Department and direct them to the incident.

If, for any reason, the WRTS Operator is incapacitated or not present, the activities listed above shall be carried out by the first available cognizant person arriving at the scene.

### 4.2.2 Earthquakes

Major earthquakes fall in the category of a large incident as defined in Section 1.2. However, the WRTS Operator may take the following measures before the Incident Commander or the Assembly Point Leader arrives:

1. Initiate the following onsite response activities:
    A. Assess conditions: check for fires, fire hazards, or waste releases at the WRTS.

B. Dial extension 911 to contact the LLNL Emergency Dispatcher if Fire Department response is necessary.

C. Determine whether there has been damage to tanks, and cordon off the area if necessary.

D. If safe, stop the source of any spills, and contain any spilled material.

E. Check utility lines and equipment for damage. Shut off electrical power to equipment. Eliminate all potential ignition sources. Matches, lighters, open-flame appliances, or electrical appliances must not be used until it is certain that there are no flammable vapors present.

F. Assist other employees and visitors in need, but do not move seriously injured persons unless they are in immediate danger of further injury.

2. If the WRTS Operator is incapacitated, any cognizant individual arriving at the scene shall take the actions outlined above until the arrival of the Incident Commander or the Assembly Point Leader. When the Assembly Point Leader arrives, he or she will organize a sweep team to accomplish the tasks listed above.

3. All personnel shall follow these general procedures:

A. If indoors during the earthquake, get under a table or desk in a corner away from windows or stand in a strong doorway.

B. If instructed to evacuate, go to the Emergency Assembly Point and follow the instructions of the Assembly Point Leader (LLNL *Draft Emergency Plan* [1]).

C. If outdoors during the earthquake, avoid high buildings, walls, power poles, and other objects that could fall, and move to an open area away from all hazards.

D. Avoid downed power lines or objects touching downed lines.

E. Exercise common sense; remain as calm as possible and follow instructions given over the emergency public address system.

### 4.2.3 Power Outages

Normal operations of the WRTS may require power; therefore, power outages could have a significant impact on their operation. Procedures specific to each WRTS are identified in Section D5.1 of each Site-Specific Plan (Appendix D). If emergency lighting is needed for any reason, the following resources are available:

1. A gas-powered portable generator and three floodlights are maintained in HWM's response trailer which is located in the Area 612 Facility. This equipment can be used during emergency situations. The portable generator is serviced and tested once a month regardless of use.

2. Two additional portable generators are maintained with additional floodlights and construction light strings in the Maintenance and Facilities Group equipment yard, located north of Building 419. These generators are also tested and serviced once a month regardless of use.

3. Large portable emergency lighting units are also available from LLNL's Plant Engineering Department, Labor Shop. The equipment is located in the 519 Corp Yard.

### 4.2.4 Waste Release from the Waste Retention Tank System

If a tank holding waste spills, leaks, or otherwise releases its contents to the environment and there is no immediate threat to personnel safety, trained program personnel must take immediate action to contain the release (follow spill response procedures outlined in Sections 4.2.4.1 and 4.2.4.2).

#### 4.2.4.1 Procedures to Stop and Contain Waste in the Event of a Small Incident

When visual monitoring indicates that a release has occurred, trained personnel shall take the following steps:

1. Ensure tank operations are discontinued (e.g., stop flow of waste to tank).

2. Determine the source, type, and amount of leaking material.

3. If safe, eliminate the source of the release (e.g., stop leak, close valves).

4. Eliminate ignition sources.

5. Cordon off the spill area to prevent access to the area.

6. Notify the Building Coordinator and EOG Analyst.

Steps 7 through 11 shall be taken only if it is safe and must be carried out by at least two individuals who have been trained as described in Section 7.

7. Contain the release using appropriate personal protective equipment (PPE) (see Appendix A) and absorbent (see Appendices B and C). Stop the leak. If the leak cannot be stopped, take appropriate actions to have all contents remaining in the tank pumped out.

8. Clean up the release including decontamination of the tank and secondary containment, as necessary.

9. Properly dispose of spent cleanup materials such as absorbents and rags; manage as hazardous or mixed waste as appropriate.

10. Decontaminate response equipment (see Section 4.3.1), and restock spill response supplies before operations resume.

11. Remove the tank system from service until all necessary repairs are made and the system is inspected by the EOG Analyst, TAGG Analyst, Building Coordinator, and the H&S Technician. Note: Major repairs require certification by an independent certified engineer.

Note: If there is any uncertainty about safely managing the release, the responsible individual should immediately call the LLNL Emergency Dispatcher at extension 911.

#### 4.2.4.2 Procedures to Stop and Contain Waste in the Event of a Large Incident

In the event of a large waste release, the WRTS Operator shall implement the Contingency Plan as specified in Section 1.2 by calling the LLNL Fire Department at extension 911.

If a large waste release occurs during normal working hours, the WRTS Operator shall:

1. Ensure tank operations are discontinued (e.g., stop flow of waste to tank).
2. Initiate the following onsite responses activities:
   A. Dial extension 911 for the LLNL Emergency Dispatcher.
   B. Identify his/her name.
   C. Give the location of release and any injured parties. Include building number, cross streets, and significant landmarks.
   D. Indicate the nature of the release, if known (i.e., material identification, quantity, and extent of release).
   E. Remain on the phone to verify the information given to the LLNL Emergency Dispatcher and receive further instructions.
   F. Request the LLNL Emergency Dispatcher to contact the EDO, ES&H Team Leader, and the on-duty H&S Technician.
3. Give emergency aid to the injured, if possible.
4. Notify the Building Coordinator and the EOG Analyst.
5. If safe, trained personnel shall continue with the following steps:
   A. Determine the source, type, and amount of leaking material.
   B. Eliminate the source of the release (e.g., stop leak, close valves).
   C. Take action to contain the release.
   D. Eliminate ignition sources.
   E. Cordon off the release area to prevent access to the area.

#### 4.2.4.3 Removal of Liquids in Secondary Containment

Liquids in secondary containment may be hazardous, radioactive, mixed, or nonhazardous, depending on the source of liquid. Following a rainstorm, steps need to be taken to determine whether liquid found in a secondary containment structure open to precipitation is only rainwater, and if it can be disposed of accordingly. Upon discovery of liquid thought to be rainwater in a secondary containment structure, a thorough inspection of the system must be performed to determine whether the liquid is rainwater or is the result of a spill from the tank system. The inspection must include the following steps:

1. Check leak-monitoring equipment, overfill-protection devices, and spill-prevention devices for signs of system malfunctions.
2. Check level of tank(s) for unexplained level changes or exceptionally high levels.
3. Check tank(s), piping, pump(s), valves, and joints for signs of leakage (e.g., drips, stains, wet spots, cracks, bulges, etc.).
4. Check color, clarity, and odor of the liquid for any signs of contamination and for presence of an oil sheen.
5. Check records to ensure that all past spills have been adequately cleaned, residues removed, and post clean-up samples taken.

The accumulated water from the first rainstorm of the season is considered potentially contaminated with hazardous constituents and will be collected, sampled, and analyzed for the constituents normally found in the WRTS wastewater. If the rainwater is found to be contaminated, the secondary containment will be cleaned and subsequent rainwater will be analyzed until such time that the rainwater is found to be uncontaminated. If the rainwater from the first rainstorm (or subsequent rainstorms following cleaning of the secondary containment) is found to be uncontaminated, future rainwater will be managed according to the following steps:

6. Test the pH level of the liquid using pH paper or a pH meter (pH level is acceptable for discharge to storm drain or ground if it is within the range of 6.5 to 8.5). If the pH is outside of this range, contact the wastewater representative in EMAD.
7. Perform a radioactive contaminant screening analysis for tanks associated with Radioactive Material Management Area (RMMA) buildings. The H&S Technician can perform the screening at the WRTS. If the results are above 25 disintegrations per minute screening level, then contact HWM for proper protocol for the disposal of bermed water.
8. The rainwater can be released to the storm drain system or ground if the pH and radioactive screening results are within the ranges specified in Nos. 6 and 7 above and if there is no sign of:

- A release from the tank system
- Hazardous constituents
- Off-color
- Turbidity
- Odor
- Oil sheen

If there is indication of a tank system release or if hazardous or radioactive constituents are present, spill response procedures must be immediately initiated.

If the results of the inspection are inconclusive, the liquid must be sampled and analyzed for the constituents normally found in the WRTS wastewater and be properly disposed of according to the analytical results.

9. If collected rainwater is drained through a berm drain, ensure that the drain cap is replaced and locked and that the drain valve is shut and locked after the rainwater is discharged.

10. A record of rainwater discharges must be maintained by the program or department responsible for the WRTS. The record must include:

    - Date of discharge
    - Amount of rainwater (in inches) discharged
    - Any observations,
    - Name of the EOG Analyst assigned to the program or department
    - Name and signature of the person performing the rainwater inspection and discharge.

    Records must be maintained for a minimum of three years and be made for review.

If the analytical results indicate the presence of contaminants in the rainwater or if the pH is outside the allowed range for discharge to ground, the accumulated rainwater must be either:

1. Discharged to the sanitary sewer system (with authorization from EPD)
2. Sent to HWM for treatment or disposal

All other liquids detected (i.e., liquids other than rainwater) within the secondary containment must be collected in appropriate containers and sent to HWM for treatment or disposal.

#### 4.2.4.4 Equipment Failure

Equipment that could fail includes the tank, piping, valves, pumps, level indicator alarms, and leak alarms. Procedures specific to each WRTS are identified in Section D5.2 of each Site-Specific Plan (Appendix D). Following an emergency that could impact the integrity of the tank system, the tank, piping, valves, and leak detection and monitoring equipment shall be inspected to ensure the system is leak tight and operational.

## 4.3 Decontamination

### 4.3.1 Waste Retention Tank System Decontamination Activities

In the event of a small incident, all equipment, protective clothing, and other materials used in spill response must be evaluated to determine if they are contaminated with hazardous, radioactive, or mixed waste. All nondisposable items will be decontaminated by rinsing the equipment in a container with an appropriate solution (e.g., water, soap, or solvent). Rinsate from decontamination operations will be managed as waste, pending analysis. If test results indicate that the rinsewater is hazardous, radioactive, or mixed, it will be managed according to the relevant regulatory requirements. All disposable items are handled as hazardous, radioactive, or mixed waste unless test results indicate that the waste is not subject to regulatory requirements.

### 4.3.2 Lawrence Livermore National Laboratory Fire Department Decontamination Activities

The LLNL Fire Department manages all decontamination efforts following large incidents. Their decontamination procedures are discussed in *LLNL Fire Department Policies and Procedures.*[2]

## 4.4 Notification to the Department of Energy and Regulatory Agencies

When a release occurs, EPD personnel (the EOG Analyst during normal working hours or the EDO during off-hours) must be notified immediately. EPD personnel will inform the Laboratory Emergency Duty Officer, Occurrence Reporting Office, and the appropriate program/department of required reporting to federal, state, and/or local agencies. EPD personnel will then notify environmental regulatory agencies as necessary (see **Table 4** for regulatory agency phone contact list) following EPD's Environmental Incident Notification and Reporting Procedure.

EPD personnel will also assist the program/department in determining whether the Department of Energy (DOE) must be notified. If the incident is reportable to DOE under the occurrence reporting requirements set forth in DOE Order 5000.3B, program/department personnel must verbally notify the LLNL Occurrence Reporting Office of the incident and write the required occurrence reports.[3]

**Table 4. Regulatory Agency Phone Contact List.**

| Agency | Phone Number |
|---|---|
| National Response Center | (800) 424-8802 |
| California Office of Emergency Services | (800) 852-7550 |
| Department of Toxic Substances Control, Region 2 | (510) 540-3739 |
| Alameda County Health Care Service Agency<br>Hazardous Material Management Program | (510) 271-4320 |
| Environmental Protection Agency (EPA) Region IX Office<br>Office of Pesticides and Toxic Substances Branch | (415) 744-1085 |
| EPA Region IX Office, Emergency Hotline | (415) 744-2000 |
| EPA Region IX Office, Resource Conservation and Recovery Act (RCRA) Information Center (Duty Officer) | (415) 744-2074 |
| Livermore Water Reclamation Plant | (510) 447-2896 |
| San Francisco Bay Area Regional Water Quality Control Board | (415) 464-3983 |
| Bay Area Air Quality Management District | (415) 771-6000 Ext 282 |

## 5. EMERGENCY EQUIPMENT

The following emergency and safety equipment and information are available at or near all WRTSs as appropriate:

- Fire extinguisher
- Emergency spill kit, including hand tools and absorbent material
- PPE such as gloves, safety glasses, aprons, boots, coveralls, and face shields
- Hazard warning signs (e.g., No Smoking)
- Personnel decontamination equipment, including emergency eye wash and deluge shower
- First-aid supplies
- Internal and external communication equipment (e.g., telephones)
- Material Safety Data Sheets (MSDSs)
- A posted Contingency Plan (a copy of the General Plan and the appropriate Site-Specific Plan)
- A posted WRTS Contact List

Specific emergency and safety equipment for each WRTS is listed in the Site-Specific Plan for the individual WRTS. Spill kit supplies and emergency equipment are listed in **Tables D-2** and **D-3** of Appendix D for the specific WRTS. Locations of the emergency equipment and spill kits are shown in **Figure D-2** of Appendix D for each WRTS.

## 5.1 Communications Systems

WRTSs are small enough that personnel can use verbal or hand signals to communicate with others in an emergency. Telephones are readily available at the buildings associated with the WRTS (see Appendix D, Section D4.2 and **Figure D-2** for the specific WRTS). Notification of emergencies and requests for outside assistance are channeled through the LLNL Emergency Dispatcher at extension 911. The LLNL Emergency Dispatcher can contact outside authorities and obtain assistance via telephone or radio. In addition, all Hazards Control and EPD operations personnel wear radio pagers in order to be available in the event of any incident. Internal notification of personnel can be accomplished through the sitewide public address system and building page system if an evacuation is necessary.

## 5.2 Fire Suppression Systems

### 5.2.1 Fire Extinguishers

Fire extinguishers are manually operated, portable devices that will discharge an extinguishing agent when properly activated. They are used to control a fire during the time between its discovery and the arrival of the LLNL Fire Department. Fire extinguishers are located at each WRTS as required by the Uniform Building and Fire Codes. The location and types of fire extinguishers for each WRTS are listed in the **Table D-3** in the Site-Specific Plan. Only trained personnel may use fire extinguishers.

### 5.2.2 Water Supplies

Some WRTSs have fire sprinkler systems. All sprinkler systems are fitted with a check valve. In addition, the LLNL Fire Department can be at any WRTS within three minutes of notification. Fire hydrants are located near each WRTS. The water pressure for onsite fire hydrants ranges from 60 to 80 psi.

LLNL has a primary water supply (Hetch Hetchy System) and a backup water supply (Zone 7 Water District). The primary water supply is obtained from water storage tanks located on a hill at the south end of Sandia National Laboratories. Check valves are not necessary for this water system because the system is gravity fed. In addition, the pumps that pump water into the tanks have a built-in check valve. The backup system is located at Building 295, and the Fire Pump Station is located at the north side of the Laboratory. The backup system is fitted with a check valve.

## 5.3 Response Equipment

Several categories of emergency response equipment are available at LLNL. They include spill response equipment, response vehicles, and heavy equipment.

### 5.3.1 Spill Response Equipment

Each WRTS has access to the contents of emergency spill kits. These kits contain all necessary equipment needed to contain a small spill (see **Table D-2** of the Site-Specific Plans).

The LLNL Fire Department maintains or has access to a mobile supply of equipment required to mitigate diverse emergencies; these can be used in the event of a large incident. The Special Services Unit (at Fire Station 1, Building 323) is a hazardous materials response vehicle operated by the LLNL Fire Department. It contains:

- Spill kits
- Absorbents
- Acid suits
- Encapsulating hazardous materials suits
- Self-contained breathing apparatus
- Haz-Cat test kits
- Hazardous materials reference information

HWM also maintains a response trailer containing bulk quantities of spill response equipment including absorbent materials, shovels, bags, chemically resistant brooms and dust pans, caution tape, pH paper, and PPE. The response trailer can be used to support the LLNL Fire Department when mitigating releases from large incidents.

### 5.3.2 Response Vehicles and Heavy Equipment

In case of a fire, explosion, or large release of waste, fire-fighting, containment, and emergency equipment is available for use. All LLNL Fire Department vehicles are equipped with radios on LLNL channels, Twin Valley Mutual Aid channels, and the State Mutual Aid channel. Fire Station 1 in Building 323 contains:

- One pumper
- One aerial ladder truck
- Two four-wheel drive command vehicles
- Two auxiliary pumpers
- One primary and one reserve ambulance
- Special Services Unit 1 for hazardous materials response

The LLNL Fire Department can respond within three minutes to a medical emergency with an ambulance. Patients can be taken to the LLNL Health Services, which is located near the east gate of the LLNL Main Site. For severe accidents, patients can be taken to Valley Memorial Hospital in Livermore or Valley Care Medical Center in Pleasanton.

A variety of heavy equipment is available from Plant Engineering for use in an emergency, including air compressors, cranes, cutting torches, forklifts, generators, pumps, scrapers, and bulldozers.

All emergency equipment is maintained on a regular basis to ensure that it is operational at all times. The water trucks are kept full of fuel and water for preparedness. Preventative maintenance checks are performed by the automotive fleet maintenance crew according to the recommended factory schedule.

### 5.4.3 Material Safety Data Sheets

MSDSs list the characteristics and hazards of chemicals used at the LLNL Main Site. MSDSs are maintained in several locations, including:

- Industrial Hygiene Group's files (MSDS Hotline—extension 3-2122)
- CHEMNET database available to Fire Department personnel
- Program/department files
- Service and Distribution Department, which keeps MSDS files for all products they purchase
- HWM Requisition Control Office, which keeps MSDSs accompanying HWM Disposal Requisitions submitted by waste generators
- LLNL Fire Department's Special Services Unit

## 5.4 Decontamination Equipment

The LLNL Fire Department maintains decontamination supplies for personnel and equipment. In addition, HWM maintains equipment that is available to decontaminate areas that were in contact with the released waste. This equipment includes pumps, vacuums [wet/dry vacuum and a vacuum fitted with a high-efficiency particulate air (HEPA) filter], absorbent, shovels, and brooms. All equipment is inspected monthly.

## 5.5 Testing and Maintenance of Equipment

All telephone systems and emergency equipment needed to implement this Contingency Plan are regularly inspected and tested. The telephone system is monitored by the Lawrence Livermore National Laboratory Information Exchange (LLIX) Operations Group automatically throughout the day. The system is connected to a computer, which produces a printout indicating when a phone is disconnected or out of service. LLIX repairs inoperable telephones within eight hours of computer notification.

Fire extinguishers are checked weekly by program/department personnel and monthly by H&S Technicians to ensure the extinguishers are charged, unused, and in the proper location for easy access. The extinguishers are also inspected annually by a fire extinguisher services technician.

The spill control equipment—including PPE, absorbents, shovels, and brooms—is inventoried and inspected weekly by program personnel. The shelf-life of PPE is monitored, and old PPE is disposed of and replaced with new PPE as needed. Should the waste stream in the WRTS change, the PPE will be reviewed against the types of waste stored at the WRTS.

Personnel decontamination equipment is tested weekly to ensure that it meets operating standards. The emergency eyewashes are tested and flushed for one minute each week by program/department personnel.

A daily walkthrough is performed by the responsible program/department individual at all WRTSs. For WRTSs with secondary containment, daily means working days (Monday through Friday, except weekends). For WRTSs without secondary containment, daily means every day of the year, regardless of weekends or holidays. The daily inspection is performed to detect leaks so that a response can occur in a timely manner. In addition, the TAGG Environmental Technicians assist the programs and departments in maintaining the WRTSs by conducting monthly walkthroughs. During the daily inspections, the following items are addressed:

- Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order
- The aboveground portions of the tank system, if any, to detect corrosion or releases of waste
- Data gathered from monitoring equipment and leak-detection equipment (e.g., pressure and temperature gages and level gages) to ensure that the tank system is being operated according to its design
- The construction materials and the area immediately surrounding the externally accessible portion of the tank system including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous or mixed waste (e.g., wet spots or dead vegetation)
- Hazardous or mixed waste labels, completely filled out, are affixed to each container
- Waste has been accumulated in the WRTSs for no longer than 90 days
- Adequate aisle space is maintained between and around tanks to conduct routine maintenance and inspection activities
- Safety equipment is in its proper location, easily accessible, and in good condition

- Date, time, WRTS number, and name of the person conducting the inspection are noted on the inspection sheet

# 6. EVACUATION PLAN

## 6.1 Evacuation Notification of Personnel

All of the WRTS are small enough to allow conduct of evacuation by voice command. After evacuation, the WRTS shall be cordoned off to prevent access by other personnel. If evacuation of the immediate surrounding area is necessary, the LLNL Fire Department shall request the LLNL Emergency Dispatcher to use the building page system to notify personnel. In the event of a large incident that requires sitewide evacuation, the Incident Commander or Laboratory Emergency Duty Officer will use the sitewide public address system to notify personnel. Evacuation routes for the WRTS and surrounding areas are shown in **Figure D-3** of the Site-Specific Plans.

### 6.1.1 Lawrence Livermore National Laboratory Evacuation Plan

If evacuation of personnel from all or part of the LLNL Main Site is necessary because of a major emergency, the Protective Force Division will implement actions to control evacuating personnel, protect the onsite emergency scene, and coordinate activities with outside police organizations. The Protective Force Division will initiate one of the operational responses described in the LLNL *Draft Emergency Plan*.[1] An event requiring evacuation could be caused by an onsite or offsite emergency such as an earthquake, fire, explosion, or major hazardous or radioactive material release. The Incident Commander can implement area or sitewide evacuation procedures if necessary.

## 6.2 Evacuation Routes and Assembly Points

All WRTSs are maintained with an aisle space sufficient to allow unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to the WRTS area. The evacuation routes and assembly points are specific to the WRTS (see Appendix D, Section D6).

# 7. PERSONNEL TRAINING

WRTS personnel are LLNL personnel within a program or department who are responsible for managing wastes at the WRTS. WRTS personnel are responsible for ensuring that WRTS activities are conducted in compliance with regulatory requirements. Management of hazardous and mixed waste at the WRTS may be only one portion of an individual's job. Therefore, the job titles for these personnel reflect only their tank management duties. The duties, associated training, and training frequency of the WRTS Operator are as follows:

**Job Title:** WRTS Operator

**Job Duties:** Ensures waste from the WRTS is properly managed. Identifies and labels tanks. Verifies that daily inspections are conducted and documented.

**Training Program**

| Course No. | Course Title | Instructional Method | Length (hour) | Frequency |
|---|---|---|---|---|
| EP0006 | Hazardous Waste Generation and Certification | Lecture | 3.5 | Every 12 months |
| EP0053 | Introductory Waste Accumulation Area Personnel Training | Lecture/ practical | 2.5 | Every 12 months |
| HS0001 | New Employee Safety Orientation* | Lecture | 0.5 | Once |

* To be completed prior to engaging in hazardous, radioactive, and mixed waste operations that could result in exposure to hazardous substances or safety/health hazards.

# 8. REFERENCES


1. W.E. Nelson, *Draft Emergency Plan*, Lawrence Livermore National Laboratory, Livermore, CA, M-014, Rev. 1 (1993).
2. LLNL, "Tactical Plan 1612," *LLNL Fire Department Policies and Procedures*, Vol. 1, Lawrence Livermore National Laboratory, Livermore, CA (1992).
3. J. Clatworthy, *Emergency Preparedness and Response Training Program, EM 2010 Occurrence Reporting*, Lawrence Livermore National Laboratory, Livermore, CA (1994).
4. *California Code of Regulations*, Title 22, Division 4.5, Chapter 15.
5. "Hazardous Waste Control," *California Health and Safety Code*, Division 20, Chapter 6.5.
6. U.S. Environmental Protection Agency, *Code of Federal Regulations*, Title 40.
7. *California Code of Regulations*, Title 23, Division 3, Chapter 16.
8. Operations and Regulatory Affairs Division, *Environmental Incident Notification and Reporting Procedure*, Volumes 1 and 2, Lawrence Livermore National Laboratory, Livermore, CA.

# APPENDIX A

# PERSONAL PROTECTIVE EQUIPMENT GUIDELINES

## Table A-1. Personal Protective Equipment Guidelines*

| Waste Category | Examples of Waste | Gloves | Protective Clothing | Respirator (see note) |
|---|---|---|---|---|
| **Acid waste** | Mineral acid (sulfuric acid, hydrochloric acid, hydrobromic acid); organic acid | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or polyvinyl chloride (PVC) or polyethylene booties | Full-face, air-purifying respirator with AGOV/HEPA cartridges** |
| | Chromic acid | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face, air-purifying respirator with AGOV/HEPA cartridges** |
| | Perchloric acid | Call LLNL Fire Department at extension 911 | | |
| | Hydrofluoric acid | Call LLNL Fire Department at extension 911 | | |
| **Aqueous waste** | Spent photo chemical rinsewaters, spent plating solutions, machine coolants | Neoprene or nitrile | Polyethylene-coated full-body Tyvek coveralls or full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face, air-purifying respirator with AGOV/HEPA cartridges** |
| **Caustic waste** | Sodium hydroxide, potassium hydroxide, calcium hydroxide | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face air-purifying respirator with AGOV/HEPA cartridges** |
| | Ammonia | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face air-purifying respirator with ammonia cartridge |
| **Flammable liquid waste** | Gasoline, acetone, toluene, xylene, ethanol | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Chemrel or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face air-purifying respirator with AGOV/HEPA cartridges** |
| **Flammable solid waste** | Sodium, lithium, finely divided aluminum, and metal hydrides | Call LLNL Fire Department at extension 911 | | |

**Table A-1. (Continued)**

| Waste Category | Examples of Waste | Gloves | Protective Clothing | Respirator (see note) |
|---|---|---|---|---|
| **Polychlorinated biphenyl (PCB) waste** | PCB-contaminated oil, transformer fluid, capacitor fluid | Silvershield or Safety-4-H gloves under neoprene or nitrile | Full-body, chemically resistant, protective coveralls (Saranex or equivalent) and latex or neoprene boots, or PVC or polyethylene booties | Full-face air-purifying respirator with AGOV/HEPA cartridges** |
| **Strong oxidizer waste** | Chromic acid, nitric acid (above 40%), perchloric acid (above 40%), nitrates, perchlorates, chlorates, chlorine, chlorites, peroxides, and permanganates | Chemical-specific selection required. To be determined by an Industrial Hygienist. Contact the ES&H Team Leader. | | |
| **Water reactives**<br>**DO NOT USE WATER** | Lithium hydride, sodium metal, potassium metal, uranium turnings, and acetyl chlorides | Call LLNL Fire Department at extension 911 | | |
| **Mixed waste** | Mixture of hazardous and radioactive waste | Chemical and radioactive-specific selection required. To be determined by a Health Physicist and Industrial Hygienist. Contact the ES&H Team Leader. | | |
| **Radioactive waste** | Natural or depleted uranium, plutonium | Radioactive-specific selection required. To be determined by a Health Physicist and Industrial Hygienist. Contact the ES&H Team Leader. | | |

* *This equipment is available at the LLNL Main Site and is not necessarily available at each WRTS. Refer to Appendix D for the Site-Specific Plan to determine availability of equipment. Contact the Industrial Hygienist before beginning cleanup to verify the adequacy of equipment for a specific spill.*

** *Acid Gases/Organic Vapors/High-Efficiency Particulate Air (AGOV/HEPA).*
***Note**: Personnel who intend to use a respirator must first be medically certified and fit-tested. Respirators are only issued after an evaluation by an Industrial Hygienist or Health Physicist.*

# APPENDIX B

# EQUIPMENT TO CONTAIN AND ABSORB SPILLS

## Table B-1. Equipment to Contain and Absorb Spills*

| Waste Category | Type of Equipment | Material | Additional Equipment |
|---|---|---|---|
| **Acid waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels<br>polyethylene bags |
| | Absorbent (loose) | Silicates (Floor Dry or Dry Sorb: diatomaceous earth or equivalent) except for hydrofluoric acid | Brooms (chemically resistant)<br>Dust pan (chemically resistant)<br>Caution tape<br>pH paper |
| | Acid neutralizer/ absorbent | Magnesium oxide, sodium bicarbonate, Neutrasorb, Kolor-Safe acid, or equivalent | |
| **Aqueous waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels<br>polyethylene bags |
| | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | Brooms (chemically resistant)<br>Dust pan (chemically resistant)<br>Caution tape |
| **Caustic waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels<br>polyethylene bags |
| | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | Brooms (chemically resistant)<br>Dust pan (chemically resistant)<br>Caution tape<br>pH paper |
| | Caustic neutralizer | Spill-x-c, Neutracit, Kolor-Safe base, or equivalent | |
| **Flammable liquid waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels,<br>polyethylene bags<br>Brooms (chemically resistant) |
| | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | Dust pan (chemically resistant)<br>Caution tape |
| | Solvent absorbent | Spill-x-s, Solusorb, or equivalent | |
| **Flammable solid waste** | Call LLNL Fire Department at extension 911 | | |
| **PCB waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels<br>polyethylene bags |
| | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | Brooms (chemically resistant)<br>Dust pan (chemically resistant)<br>Caution tape |
| | Detergent | Powerclean 151 or equivalent | |

**Table B-1. (Continued)**

| Waste Category | Type of Equipment | Material | Additional Equipment |
|---|---|---|---|
| **Strong oxidizer waste** | Absorbent socks | Polyethylene pulp | Polypropylene shovels<br>polyethylene bags |
| | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | Brooms (chemically resistant)<br>Dust pan (chemically resistant)<br>Caution tape<br>pH paper |
| **Water reactives** | Absorbent socks | Polyethylene pulp | Call LLNL Fire Department at extension 911 |
| **DO NOT USE WATER** | Absorbent (loose) | Silicates (Floor Dry: diatomaceous earth or equivalent) | |
| **Mixed waste** | Use equipment for specific waste if radioactivity level is low. If radioactivity level is high, contact a Health Physicist. | | |
| **Radio-active waste** | Use any available equipment if radioactivity level is low. If radioactivity level is high, contact a Health Physicist. | | |

**This equipment is available at the LLNL Main Site and is not necessarily available at each WRTS. Refer to Appendix D for the Site-Specific Plan to determine availability of equipment.*

# APPENDIX C

# WASTE ABSORPTION AND NEUTRALIZATION PROCEDURES

## Table C-1. Waste Absorption and Neutralization Procedures*

| Waste Category | Procedure to Absorb and/or Neutralize** |
|---|---|
| **Acid waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. An acid neutralizing absorbent may be substituted, if neutralization is desired. Carefully stir the absorbent-covered spill with a shovel. The mixture will change color when the acid is neutralized.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent into an appropriate container. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use wetted absorbent towels or pads to clean surface area until it tests neutral with pH paper.<br><br>Manage all absorbent material as hazardous waste. |
| **Aqueous waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. Carefully stir the absorbent-covered spill with a shovel.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use wetted absorbent towels or pads to clean surface.<br><br>Manage all absorbent material as hazardous waste. |
| **Caustic waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. A caustic neutralizing absorbent may be substituted, if neutralization is desired. Carefully stir the absorbent-covered spill with a shovel. The mixture will change color when the caustic is neutralized.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use wetted absorbent towels or pads to clean surface area until it tests neutral with pH paper.<br><br>Manage all absorbent material as hazardous waste. |

**Table C-1. (Continued)**

| Waste Category | Procedure to Absorb and/or Neutralize** |
|---|---|
| **Flammable liquid waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. Carefully stir the absorbent-covered spill with a shovel.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a nonsparking shovel to scoop up the loose absorbent. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use wetted absorbent towels or pads to clean surface.<br><br>Seal contaminated clothing and absorbent material in a vapor-tight container.<br><br>Manage all absorbent material as hazardous waste. |
| **Flammable solid waste** | Call LLNL Fire Department at extension 911. |
| **PCB waste** | Contain oily spill by surrounding it with absorbent socks. These are easier to clean up than loose absorbent.<br><br>Next, cover the spill with absorbent socks, working from the perimeter of the spill inward toward the center. Loose absorbent may be used for this step, if desired. Stir the pile of loose absorbent carefully.<br><br>When the PCB is totally absorbed, carefully place the socks into a disposal bag or directly into an appropriate waste container. If applicable, shovel loose absorbent into a waste container.<br><br>Solid surfaces must be double washed or rinsed with kerosene or an appropriate detergent (an equivalent solvent in which PCBs are at least 5% soluble by weight). Keep area cordoned off until swipe samples are collected and analyzed, and the area is approved for reentry. |
| **Acid oxidizer waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. An acid-neutralizing absorbent may be substituted, if neutralization is desired. Carefully stir the absorbent-covered spill with a shovel. The mixture will change color when the acid is neutralized.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use wetted absorbent towels or pads to clean surface area until it tests neutral with pH paper.<br><br>Manage all absorbent material as hazardous waste. |

**Table C-1. (Continued)**

| Waste Category | Procedure to Absorb and/or Neutralize** |
|---|---|
| **Other oxidizer waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. Carefully stir the absorbent-covered spill with a shovel.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent. A chemically resistant broom and dust pan may be used to sweep up absorbent residue.<br><br>Use a wetted absorbent pad to clean surface.<br><br>Manage all absorbent material as hazardous waste. |
| **Water reactives** | If it is safe to do so, place absorbent around storm drain or sewer openings.<br><br>Call LLNL Fire Department at extension 911. |
| **Mixed waste** | Follow the Waste Absorption and Neutralization Procedures for the hazardous waste constituent in the mixed waste. |
| **Radioactive waste** | Contain the spill by surrounding it with absorbent socks or by diking the perimeter with scoops of loose absorbent material compatible with the substance spilled. Begin at the side(s) where release flows toward drains or other conduits to the environment.<br><br>Next, cover the spill with loose, compatible absorbent material, working from the perimeter inward toward the center. Use sufficient quantities to completely cover the liquid. Carefully stir the absorbent-covered spill with a shovel.<br><br>Very small spills may be contained and absorbed solely with an absorbent sock.<br><br>Use a shovel to scoop up the loose absorbent. A broom and dust pan may be used to sweep up absorbent residue.<br><br>Use a wetted absorbent pad to clean surface.<br><br>Manage all absorbent material as radioactive waste. |

* *These wastes are present at the LLNL Main Site, but are not necessarily present at each WRTS. Refer to Appendix D for the Site-Specific Plan to determine the wastes present.*

** ***Note**: Contact the WRTS Operator and the Environmental Operations Group Analyst before cleaning up the released waste.*

# APPENDIX D-1

# WASTE RETENTION TANK SYSTEM
# 141-R1

# APPENDIX D-1

# WASTE RETENTION TANK SYSTEM 141-R1

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-5**
D4.1 Emergency Equipment Available Near the WRTS ..... D-5
D4.2 Communication Equipment ..... D-5

**D5. EMERGENCY CONTROL PROCEDURES ..... D-7**
D5.1 Power Outages ..... D-7
D5.2 Equipment Failure ..... D-7

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-7**

### List of Figures

Figure D-1. Location of WRTS 141-R1 at LLNL Main Site ..... D-3
Figure D-2. WRTS 141-R1 Emergency Supplies ..... D-4
Figure D-3. WRTS 141-R1 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-6
Table D-3. Emergency Equipment ..... D-7

# APPENDIX D-1

# WASTE RETENTION TANK SYSTEM 141-R1

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank System (WRTS) 141-R1. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 141-R1 but applies to WRTSs in general is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 141-R1 Waste Retention Tank System** |
| **Department/Program** | Engineering |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Ray Gonfiotti<br>Special Processing and Waste Handling Manager<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-227)<br>Livermore, CA 94551<br>Ph.: (510) 422-8523 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 141-R1 is located in the southwest quadrant of the LLNL Main Site (see **Figure D-1**), east of Building 141 (see **Figure D-2**). Wastewater may be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility located at Area 514 or 612 or until it is treated at Building 141 in a Temporary Treatment Unit (TTU).

## D2.2 Physical Description

WRTS 141-R1 consists of two, 1,500-gallon, single-walled, onground, fiberglass tanks, which are identified as 141-R1O1 and 141-R1O2 (see **Figure D-2**). The tanks are located in a secondary containment berm along with WRTSs 141-R2 and 141-R3. The piping to the tank system is single-wall, aboveground piping that is secondarily contained by the building and the bermed area. Wastewater is discharged from plating operations in Building 141 to pump lift stations that are connected to the aboveground piping system. The aboveground piping discharges into 141-R1O1.

## D2.3 Description of Waste

WRTS 141-R1 accumulates rinsewater from plating operations inside Building 141. The wastestream consists of rinsewater contaminated with metals and some solvents. The pH of the rinsewater ranges between 3 and 9.

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Technician are responsible for providing information and assistance in the event of an emergency. ES&H Team 3 is the support team for WRTS 141-R1.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

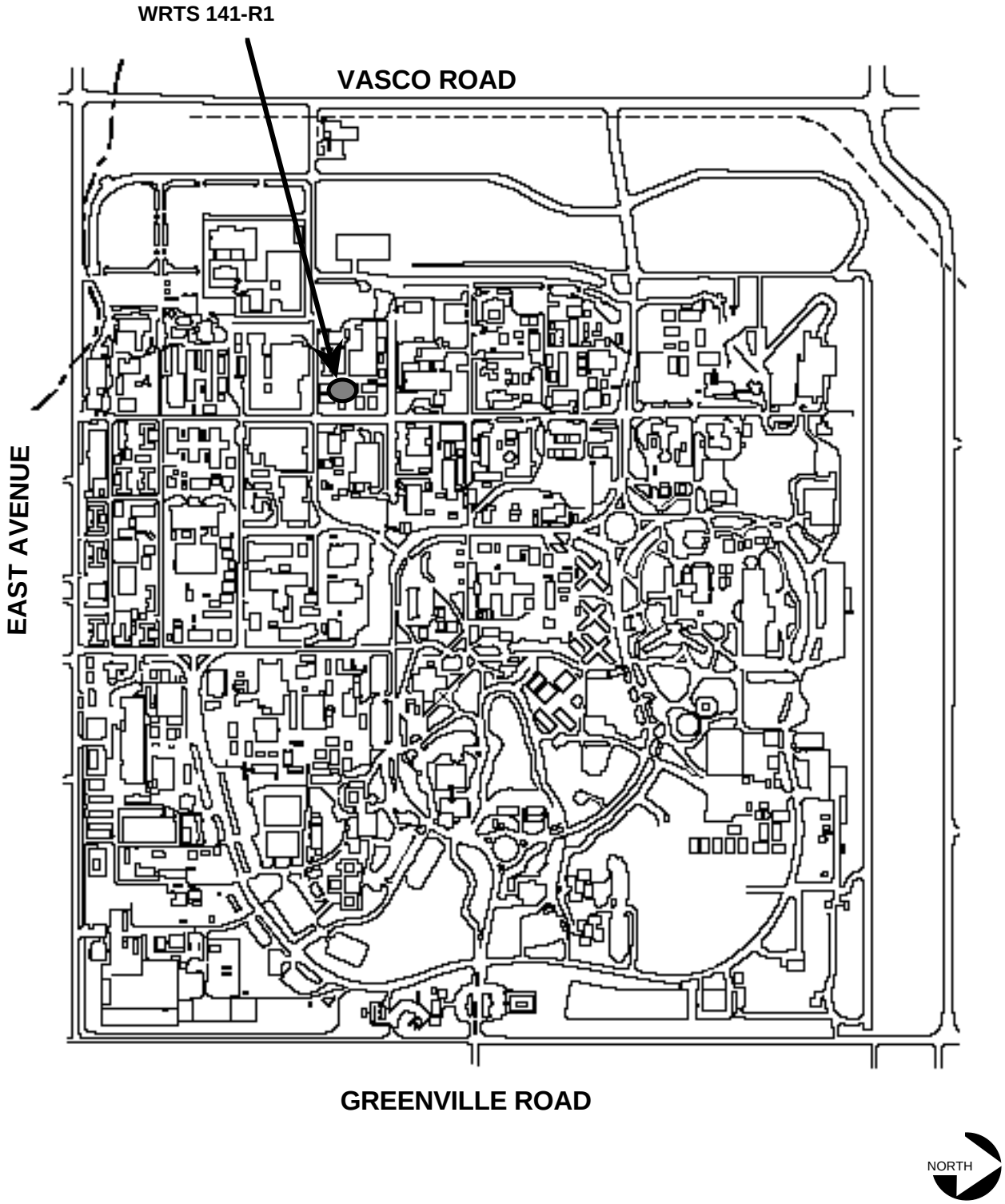



**Figure D-1. Location of WRTS 141-R1 at LLNL Main Site.**

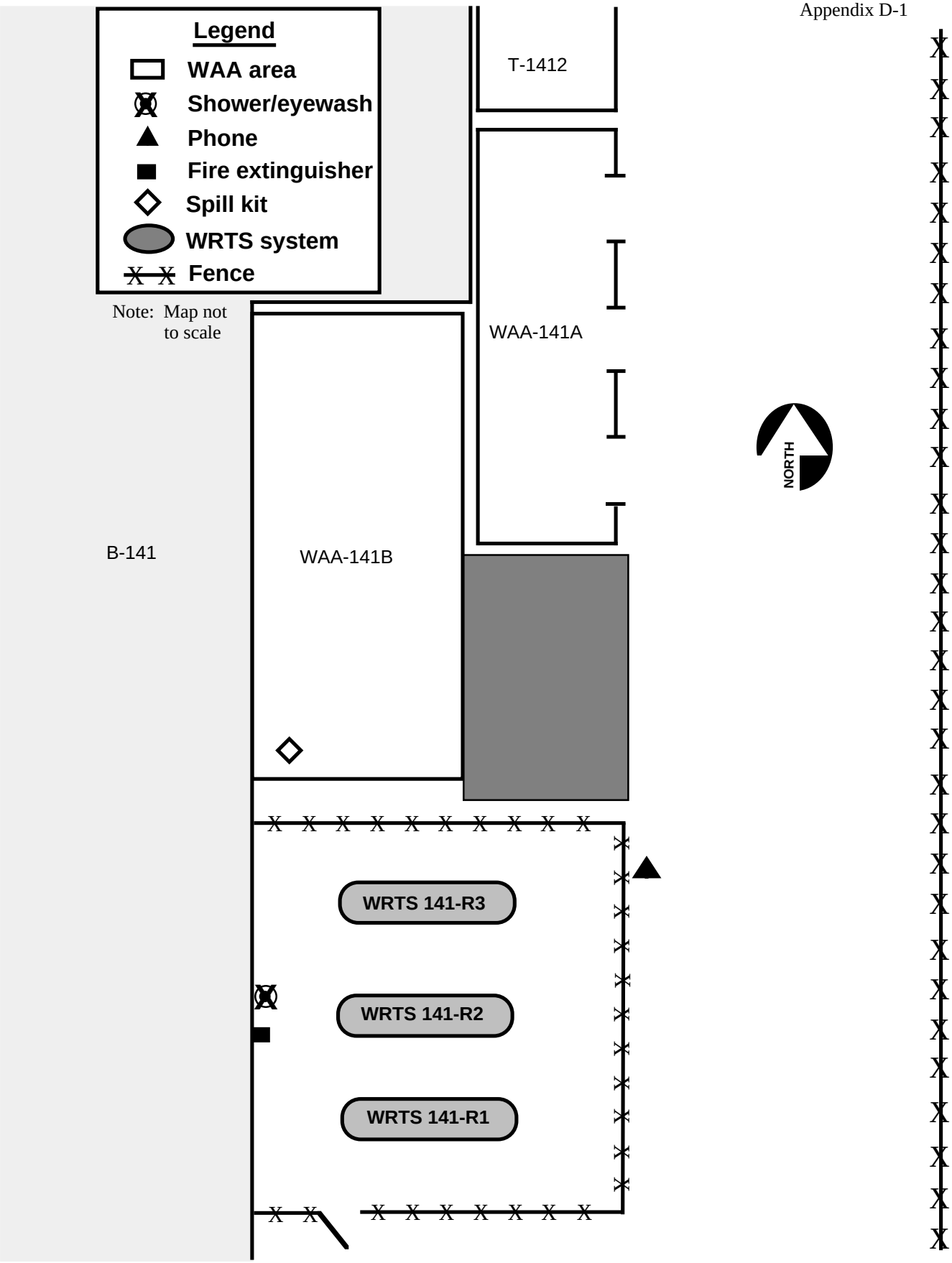



**Figure D-2. WRTS 141-R1 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Operator | Ray Gonfiotti | 422-8523 | 07200 |
| ES&H Team Leader | Al Celoni | 423-1193 | 04019 |
| TAGG Analyst | Bill Schwartz | 423-6626 | 04488 |
| EOG Analyst | Richard Michalik | 422-5010 | 04259 |
| HWM Technician | Russell Ratti | 423-1996 | 03696 |
| H&S Technician | Karl Stetter | 422-3474 | 05435 |

*In an emergency, immediately notify the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 141-R1 are located in the Building 141B Waste Accumulation Area (WAA) on the north side of the WRTS. A fire extinguisher and emergency shower/eyewash are located in the WRTS secondary containment area along the east wall of Building 141. Material Safety Data Sheets (MSDSs) are available in Building 141, Room 1140; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 141-R1 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

## D4.2 Communication Equipment

A telephone is located outside of the fenced WRTS area near the northeast corner of the WRTS. Telephones are also located in Building 141, Room 1136 and in most other buildings in the area.

**Table D-2. Spill Kit Supplies.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Spill kit cabinet in the Building 141B WAA |
| **Polyethylene bags** | 20 ea | Line drums and contain contaminated absorbent or other solid waste | Spill kit cabinet in the Building 141B WAA |
| **Broom (polypropylene or equivalent)** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Next to fence on the west side of the Building 141B WAA |
| **Shovel (aluminum, polypropylene or equivalent), nonsparking** | 1 ea | Scoop absorbent material for placement in waste containers | Next to fence on the west side of the Building 141B WAA |
| **Bung wrench, nonsparking** | 1 ea | Remove or replace bungs on drums | Spill kit cabinet in the Building 141B WAA |
| **Ratchet with 15/16-in. socket** | 1 ea | Remove or replace bolts from ring-top drums | Spill kit cabinet in the Building 141B WAA |
| **Gloves—Silvershield or 4-H** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Gloves—neoprene or nitrile** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Chemically resistant protective coveralls (Chemrel or equivalent)** | 2 ea | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Boot covers—disposable polyvinyl chloride (PVC) or polyethylene** | 10 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Face shields** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Safety goggles** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Tape—2-in. duct** | 1 roll | Seal protective suits, gloves, and containers | Spill kit cabinet in the Building 141B WAA |
| **Tape—HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alert personnel of hazard | Spill kit cabinet in the Building 141B WAA |
| **Marker—permanent, waterproof** | 1 ea | Label containers | Spill kit cabinet in the Building 141B WAA |
| **pH test paper** | 1 ea | Quickly determine if material is acidic or alkaline | Spill kit cabinet in the Building 141B WAA |
| **Wipes (Kimwipe or equivalent)** | 1 boxes | Absorb water, solvents, and oils | Spill kit cabinet in the Building 141B WAA |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eyewash** | 1 ea | Flush eyes for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires; LLNL Fire Department must be called if a fire occurs | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Drum dolly** | 1 ea | Move drums | South side of the Building 141B WAA |
| **Dolly** | 1 ea | Move various sized containers of waste | South side of the Building 141B WAA |
| **55-gal drum** | 1 ea | Contain released waste and absorbent material | Spill kit cabinet in the Building 141B WAA |

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will affect leak detection and monitoring equipment. Once power resumes, the leak detection and monitoring systems will be tested in accordance with the Operational and Maintenance Plan for the 141 WRTSs. Power outages will have no adverse impact on system operations because the wastestream is manually discharged to the lift stations.

## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 141-R1 is from the south side of the enclosed area. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located at Fourth Street, north of Trailer 1452 (see **Figure D-3**).

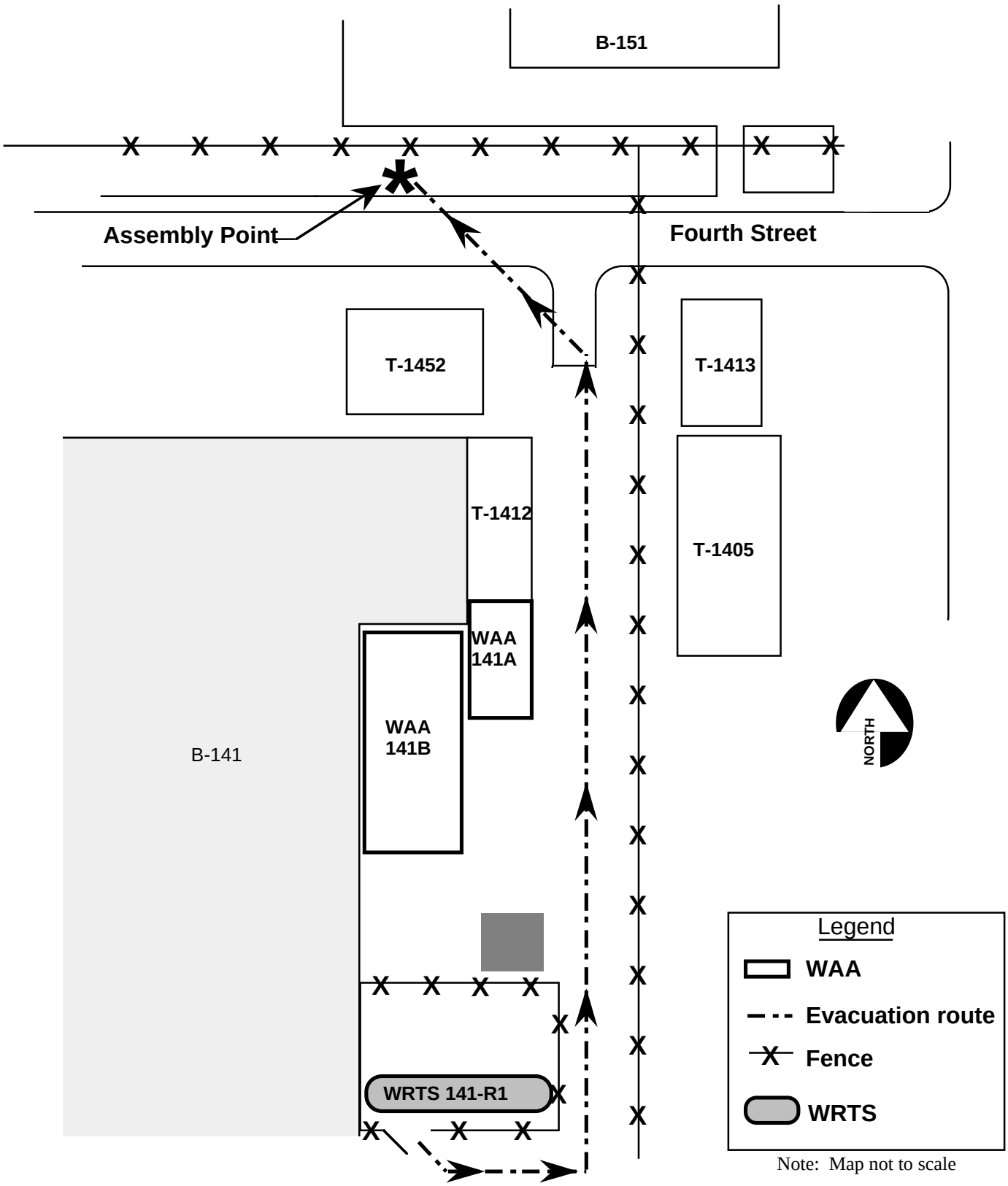



**Figure D-3. WRTS 141-R1 Evacuation Route.**

# APPENDIX D-2

# WASTE RETENTION TANK SYSTEM
# 141-R2

# APPENDIX D-2

# WASTE RETENTION TANK SYSTEM 141-R2

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-5**
D4.1 Emergency Equipment Available Near the WRTS ..... D-5
D4.2 Communication Equipment ..... D-5

**D5. EMERGENCY CONTROL PROCEDURES ..... D-7**
D5.1 Power Outages ..... D-7
D5.2 Equipment Failure ..... D-7

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-7**

### List of Figures

Figure D-1. Location of WRTS 141-R2 at LLNL Main Site ..... D-3
Figure D-2. WRTS 141-R2 Emergency Supplies ..... D-4
Figure D-3. WRTS 141-R2 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-6
Table D-3. Emergency Equipment ..... D-7

# APPENDIX D-2

# WASTE RETENTION TANK SYSTEM 141-R2

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank System (WRTS) 141-R2. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 141-R2, but applies to WRTSs in general is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 141-R2 Waste Retention Tank System** |
| **Department/Program** | Engineering |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Ray Gonfiotti<br>Special Processing and Waste Handling Manager<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-227)<br>Livermore, CA 94551<br>Ph.: (510) 422-8523 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 141-R2 is located in the southwest quadrant of the LLNL Main Site (see **Figure D-1**), east of Building 141 (see **Figure D-2**). Wastewater may be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility located at Area 514 or 612 or until it is treated at Building 141 in a Temporary Treatment Unit (TTU).

## D2.2 Physical Description

WRTS 141-R2 consists of two, 500-gallon, single-walled onground fiberglass tanks, which are identified as 141-R2O1 and 141-R2O2 (see **Figure D-2**). The tanks are located in a secondary containment berm along with WRTSs 141-R1 and 141-R3. The piping to the tank system is single-wall, aboveground piping that is secondarily contained by the building and the bermed area. Wastewater is discharged from plating operations in Building 141 to pump lift stations that are connected to the aboveground piping system. The aboveground piping discharges into 141-R1O1, where waste accumulates prior to transferring the waste to the 141-R2 WRTS for analysis.

## D2.3 Description of Waste

WRTS 141-R2 accumulates rinsewater from plating operations inside Building 141. The wastestream consists of rinsewater contaminated with metals and some solvents. The pH of the rinsewater ranges from 3 to 9.

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Technician are responsible for providing information and assistance in the event of an emergency. ES&H Team 3 is the support team for WRTS 141-R2.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

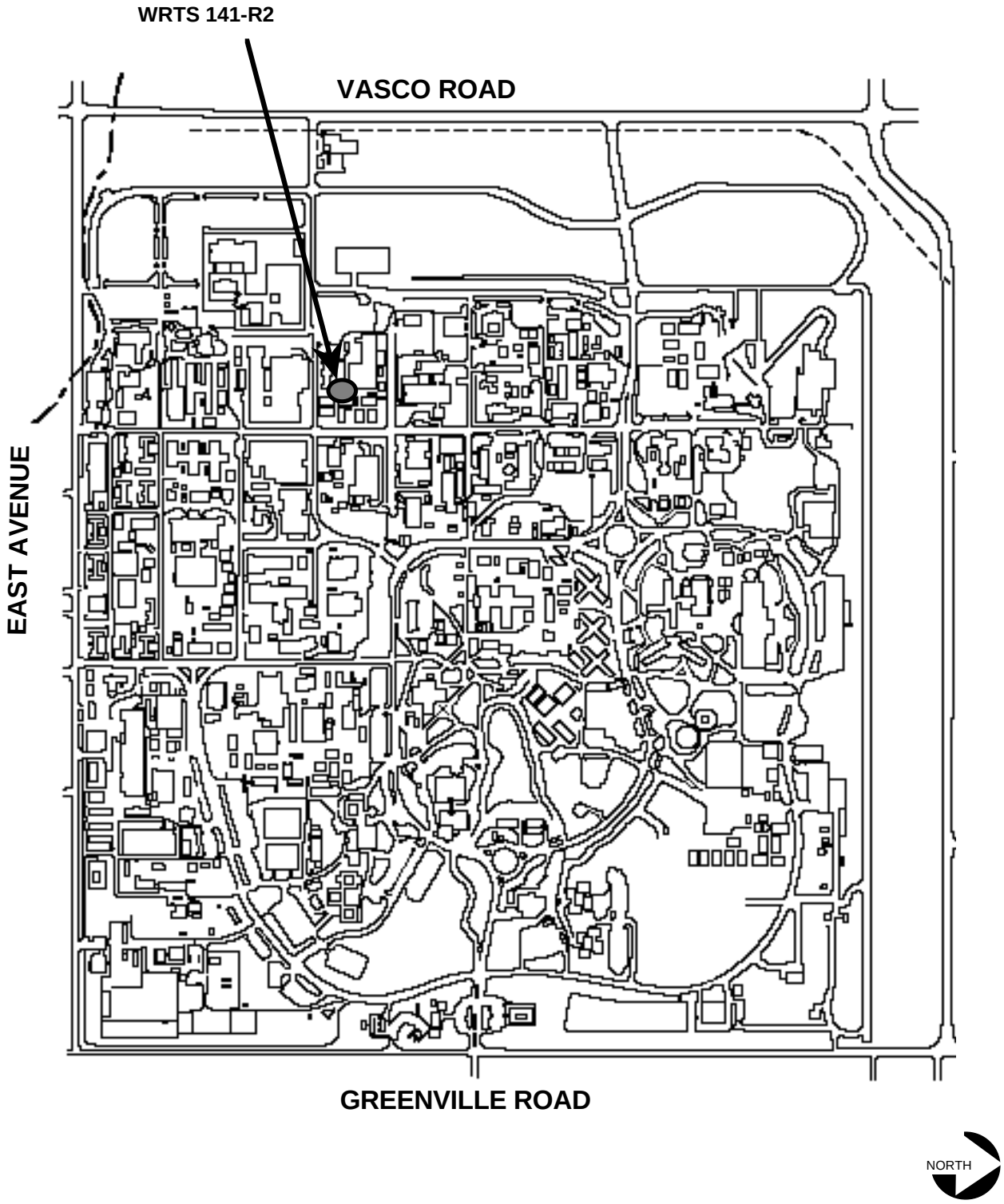



**Figure D-1. Location of WRTS 141-R2 at LLNL Main Site.**

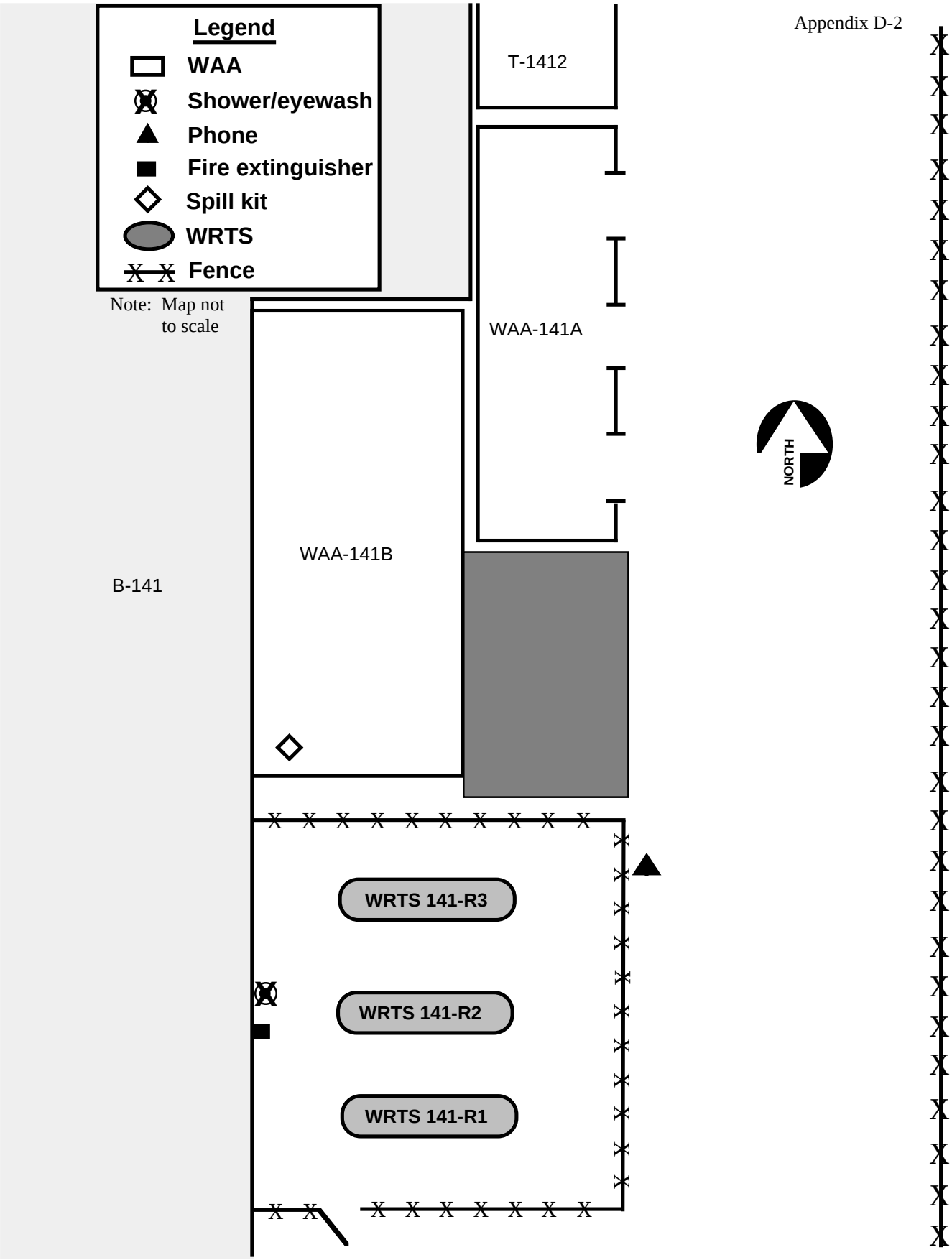



**Figure D-2. WRTS 141-R2 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Operator | Ray Gonfiotti | 422-8523 | 07200 |
| ES&H Team Leader | Al Celoni | 423-1193 | 04019 |
| TAGG Analyst | Bill Schwartz | 423-6626 | 04488 |
| EOG Analyst | Richard Michalik | 422-5010 | 04259 |
| HWM Technician | Russell Ratti | 423-1996 | 03696 |
| H&S Technician | Karl Stetter | 422-3474 | 05435 |

*In an emergency, immediately notify the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 141-R2 are located in the Building 141B Waste Accumulation Area (WAA) on the north side of the WRTS. A fire extinguisher and emergency shower/eyewash are located in the WRTS secondary containment area along the east wall of Building 141. Material Safety Data Sheets (MSDSs) are available in Building 141, Room 1140; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 141-R2 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

## D4.2 Communication Equipment

A telephone is located outside of the fenced WRTS area near the northeast corner of the WRTS. Telephones are also located in Building 141, Room 1136 and in most other buildings in the area.

## Table D-2. Spill Kit Supplies.

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Spill kit cabinet in the Building 141B WAA |
| **Polyethylene bags** | 20 ea | Line drums and contain contaminated absorbent or other solid waste | Spill kit cabinet in the Building 141B WAA |
| **Broom (polypropylene or equivalent)** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Next to fence on west side of the Building 141B WAA |
| **Shovel (aluminum, polypropylene or equivalent), nonsparking** | 1 ea | Scoop absorbent material for placement in waste containers | Next to fence on west side of the Building 141B WAA |
| **Bung wrench, nonsparking** | 1 ea | Remove or replace bungs on drums | Spill kit cabinet in the Building 141B WAA |
| **Ratchet with 15/16-in. socket** | 1 ea | Remove or replace bolts from ring-top drums | Spill kit cabinet in the Building 141B WAA |
| **Gloves—Silvershield or 4-H** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Gloves—neoprene or nitrile** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Chemically resistant protective coveralls (Chemrel or equivalent)** | 2 ea | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Boot covers—disposable polyvinyl chloride (PVC) or polyethylene** | 10 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Face shields** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Safety goggles** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Tape—2-in. duct** | 1 roll | Seal protective suits, gloves, and containers | Spill kit cabinet in the Building 141B WAA |
| **Tape—HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alert personnel of hazard | Spill kit cabinet in the Building 141B WAA |
| **Marker—permanent, waterproof** | 1 ea | Label containers | Spill kit cabinet in the Building 141B WAA |
| **pH test paper** | 1 ea | Quickly determine if material is acidic or alkaline | Spill kit cabinet in the Building 141B WAA |
| **Wipes (Kimwipe or equivalent)** | 1 boxes | Absorb water, solvents, and oils | Spill kit cabinet in the Building 141B WAA |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eyewash** | 1 ea | Flush eyes for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires. LLNL Fire Department must be called if a fire occurs | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Drum dolly** | 1 ea | Move drums | South side of the Building 141B WAA |
| **Dolly** | 1 ea | Move various sized containers of waste | South side of the Building 141B WAA |
| **55-gal drum** | 1 ea | Contain released waste and absorbent material | Spill kit cabinet in the Building 141B WAA |

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will affect leak detection and monitoring equipment. Once power resumes, the leak detection and monitoring systems will be tested in accordance with the Operational and Maintenance Plan for the 141 WRTSs. Power outages will have no adverse impact on system operations because the wastestream is manually discharged to the lift stations.

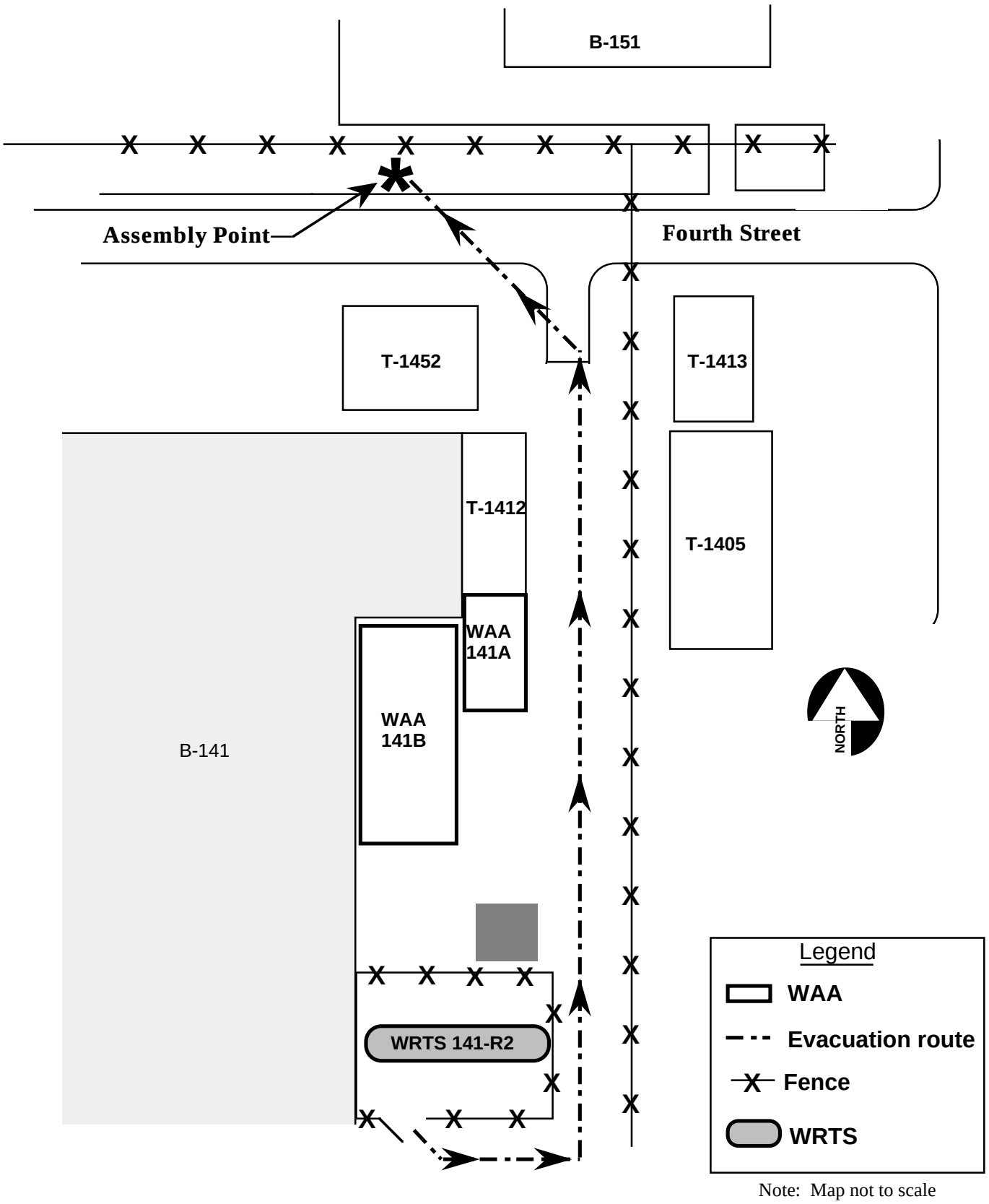
## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 141-R2 is from the south side of the enclosed area. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located at Fourth Street, north of Trailer 1452 (see **Figure D-3**).




Note: Map not to scale

**Figure D-3. WRTS 141-R2 Evacuation Route.**

# APPENDIX D-3

# WASTE RETENTION TANK SYSTEM
# 141-R3

# APPENDIX D-3

# WASTE RETENTION TANK SYSTEM 141-R3

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-5**
D4.1 Emergency Equipment Available Near the WRTS ..... D-5
D4.2 Communication Equipment ..... D-5

**D5. EMERGENCY CONTROL PROCEDURES ..... D-7**
D5.1 Power Outages ..... D-7
D5.2 Equipment Failure ..... D-7

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-7**

### List of Figures

Figure D-1. Location of WRTS 141-R3 at LLNL Main Site ..... D-3
Figure D-2. WRTS 141-R3 Emergency Supplies ..... D-4
Figure D-3. WRTS 141-R3 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-6
Table D-3. Emergency Equipment ..... D-7

# APPENDIX D-3

# WASTE RETENTION TANK SYSTEM 141-R3

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank Systems (WRTS) 141-R3. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 141-R3 but applies to WRTSs in general is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 141-R3 Waste Retention Tank System** |
| **Department/Program** | Engineering |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Ray Gonfiotti<br>Special Processing and Waste Handling Manager<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-227)<br>Livermore, CA 94551<br>Ph.: (510) 422-8523 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 141-R3 is located in the southwest quadrant of the LLNL Main Site (see **Figure D-1**), east of Building 141 (see **Figure D-2**). Wastewater may be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility located at Area 514 or 612 or until it is treated at Building 141 in a Temporary Treatment Unit (TTU).

## D2.2 Physical Description

WRTS 141-R3 consists of two, 1,500-gallon, single-walled onground fiberglass tanks, which are identified as 141-R3O1 and 141-R3O2 (see **Figure D-2**). The tanks are located in a secondary containment berm along with WRTSs 141-R1 and 141-R2. The piping to the tank system is single-wall, aboveground piping that is secondarily contained by the building and the bermed area. Wastewater is discharged from plating operations in Building 141 to pump lift stations that are connected to the aboveground piping system. The aboveground piping discharges into 141-R1O1 where waste accumulates prior to transferring the waste to the 141-R3 WRTS for analysis.

## D2.3 Description of Waste

WRTS 141-R3 accumulates rinsewater from plating operations inside Building 141. The wastestream consists of rinsewater contaminated with metals and some solvents. The pH of the rinsewater ranges between 3 and 9.

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Techician are responsible for providing information and assistance in the event of an emergency. ES&H Team 3 is the support team for WRTS 141-R3.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

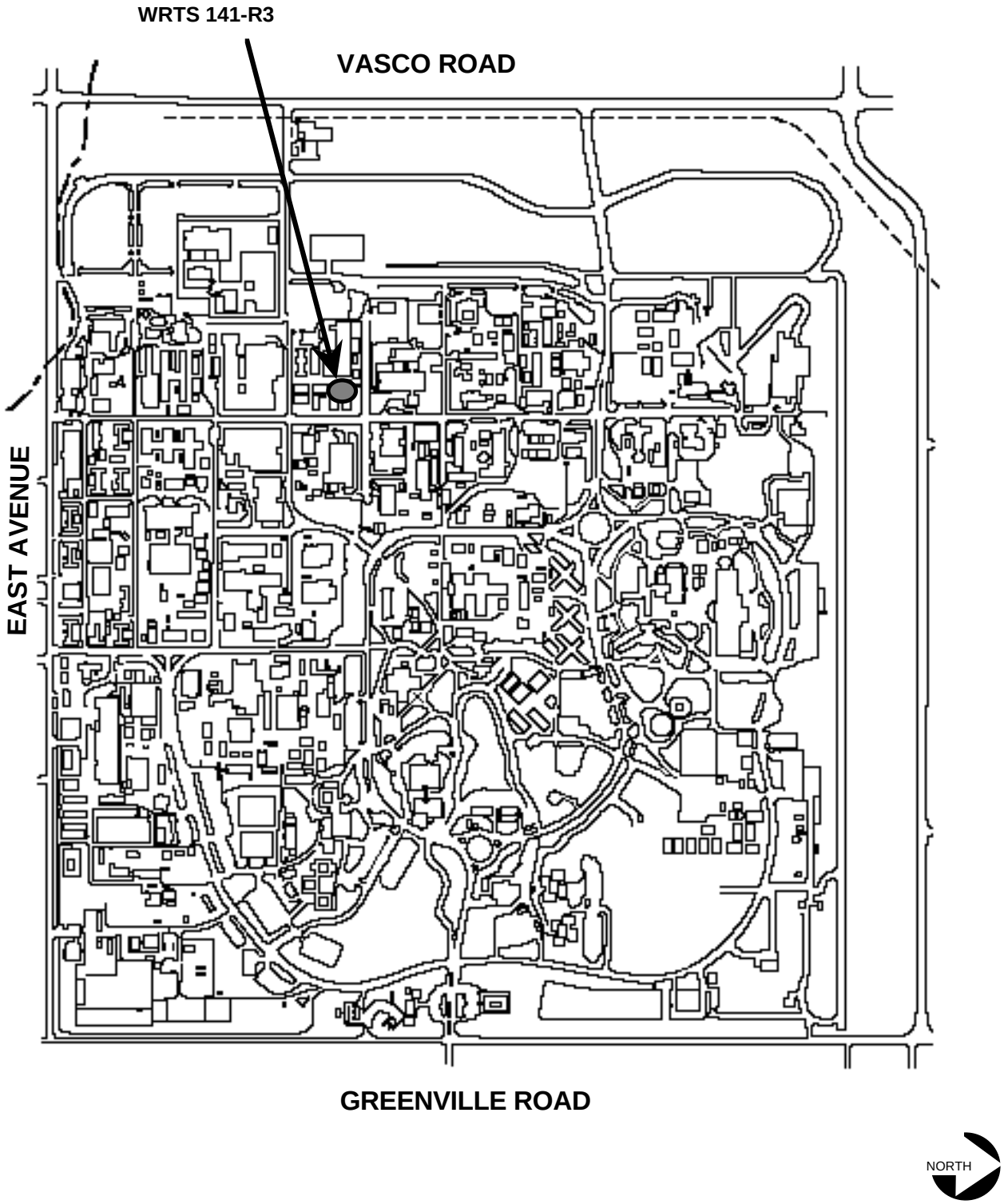



**Figure D-1. Location of WRTS 141-R3 at LLNL Main Site.**

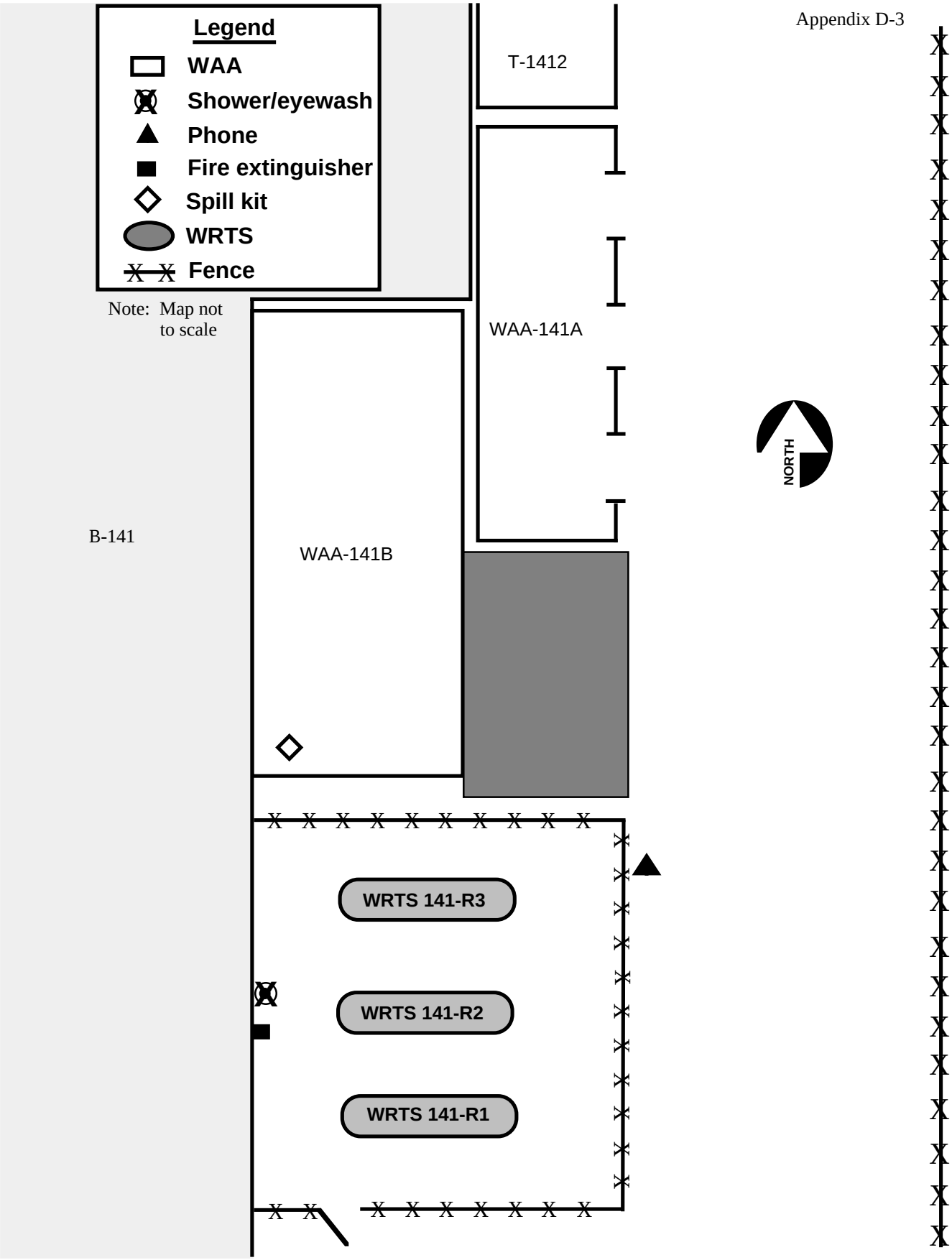



**Figure D-2. WRTS 141-R3 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Operator | Ray Gonfiotti | 422-8523 | 07200 |
| ES&H Team Leader | Al Celoni | 423-1193 | 04019 |
| TAGG Analyst | Bill Schwartz | 423-6626 | 04488 |
| EOG Analyst | Richard Michalik | 422-5010 | 04259 |
| HWM Technician | Russell Ratti | 423-1996 | 03696 |
| H&S Technician | Karl Stetter | 422-3474 | 05435 |

*In an emergency, immediately notify the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 141-R3 are located in the Building 141B Waste Accumulation Area (WAA) on the north side of the WRTS. A fire extinguisher and emergency shower/eyewash are located in the WRTS secondary containment area along the east wall of Building 141. Material Safety Data Sheets (MSDSs) are available in Building 141, Room 1140; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 141-R3 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

## D4.2 Communication Equipment

A telephone is located outside of the fenced WRTS area near the northeast corner of the WRTS. Telephones are also located in Building 141, Room 1136 and in most other buildings in the area.

**Table D-2. Spill Kit Supplies.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Spill kit cabinet in the Building 141B WAA |
| **Polyethylene bags** | 20 ea | Line drums and contain contaminated absorbent or other solid waste | Spill kit cabinet in the Building 141B WAA |
| **Broom (polypropylene or equivalent)** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Next to fence on west side of the Building 141B WAA |
| **Shovel (aluminum, polypropylene or equivalent), nonsparking** | 1 ea | Scoop absorbent material for placement in waste containers | Next to fence on west side of the Building 141B WAA |
| **Bung wrench, nonsparking** | 1 ea | Remove or replace bungs on drums | Spill kit cabinet in the Building 141B WAA |
| **Ratchet with 15/16-in. socket** | 1 ea | Remove or replace bolts from ring-top drums | Spill kit cabinet in the Building 141B WAA |
| **Gloves—Silvershield or 4-H** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Gloves—neoprene or nitrile** | 5 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Chemically resistant protective coveralls (Chemrel or equivalent)** | 2 ea | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Boot covers—disposable polyvinyl chloride (PVC) or polyethylene** | 10 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 141B WAA |
| **Face shields** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Safety goggles** | 3 ea | Protect against chemical splashes | Spill kit cabinet in the Building 141B WAA |
| **Tape—2-in. duct** | 1 roll | Seal protective suits, gloves, and containers | Spill kit cabinet in the Building 141B WAA |
| **Tape—HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alert personnel of hazard | Spill kit cabinet in the Building 141B WAA |
| **Marker—permanent, waterproof** | 1 ea | Label containers | Spill kit cabinet in the Building 141B WAA |
| **pH test paper** | 1 ea | Quickly determine if material is acidic or alkaline | Spill kit cabinet in the Building 141B WAA |
| **Wipes (Kimwipe or equivalent)** | 1 boxes | Absorb water, solvents, and oils | Spill kit cabinet in the Building 141B WAA |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eyewash** | 1 ea | Flush eyes for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires. LLNL Fire Department must be called if a fire occurs | Inside of WRTS secondary containment along the east wall of Building 141 |
| **Drum dolly** | 1 ea | Move drums | South side of the Building 141B WAA |
| **Dolly** | 1 ea | Move various sized containers of waste | South side of the Building 141B WAA |
| **55-gal drum** | 1 ea | Contain released waste and absorbent material | Spill kit cabinet in the Building 141B WAA |

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will affect leak detection and monitoring equipment. Once power resumes, the leak detection and monitoring systems will be tested in accordance with the Operational and Maintenance Plan for the 141 WRTSs. Power outages will have no adverse impact on system operations because the wastestream is manually discharged to the lift stations.

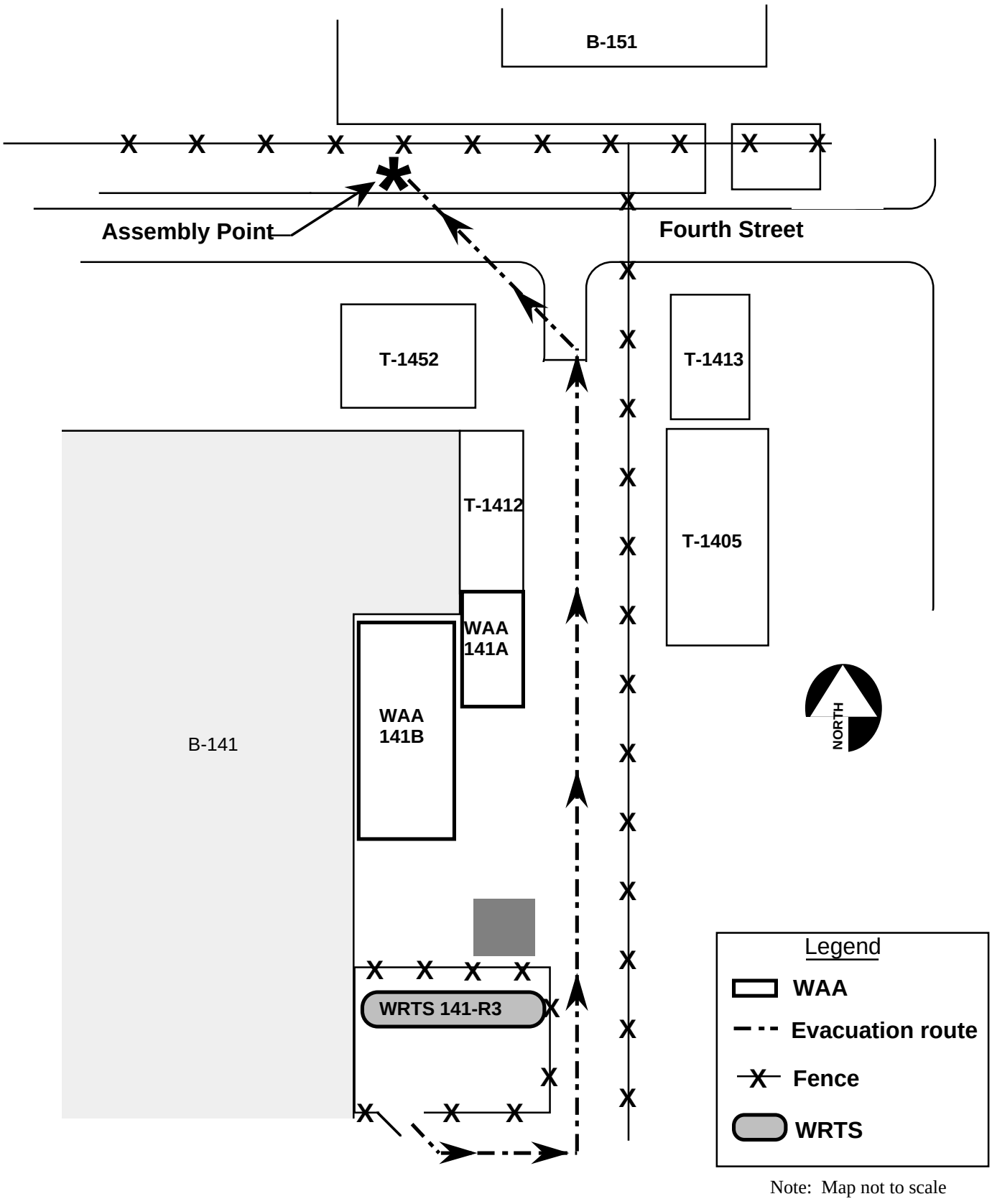
## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 141-R3 is from the south side of the enclosed area. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located at Fourth Street, north of Trailer 1452 (see **Figure D-3**).




Note: Map not to scale

**Figure D-3. WRTS 141-R3 Evacuation Route.**

# APPENDIX D-4

# WASTE RETENTION TANK SYSTEM
# 406-R1

# APPENDIX D-4

# WASTE RETENTION TANK SYSTEM 406-R1

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-4**
D4.1 Emergency Equipment Available Near the WRTS ..... D-4
D4.2 Communication Equipment ..... D-4

**D5. EMERGENCY CONTROL PROCEDURES ..... D-4**
D5.1 Power Outages ..... D-4
D5.2 Equipment Failure ..... D-6

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-6**

### List of Figures

Figure D-1. Location of WRTS 406-R1 at LLNL Main Site ..... D-3
Figure D-2. WRTS 406-R1 Emergency Supplies ..... D-4
Figure D-3. WRTS 406-R11 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-6
Table D-3. Emergency Equipment ..... D-7

# APPENDIX D-4

# WASTE RETENTION TANK SYSTEM 406-R1

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank Systems (WRTS) 406-R1. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 406-R1, but applies to WRTSs in general, is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 406 Waste Retention Tank System** |
| **Department/Program** | Environmental Restoration Division |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Jerry Duarte<br>Superintendent<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-528)<br>Livermore, CA 94551<br>Ph.: (510) 423-2177 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 406-R1 is located in the southeast quadrant of the LLNL Main Site (see **Figure D-1**), south of Trailer 4112 (see **Figure D-2**). Waste gasoline may be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility located at Area 514 or 612.

## D2.2 Physical Description

WRTS 406-R1 consists of a 1,000-gallon, carbon-steel, aboveground tank, which is identified as 406-R1A1 (see **Figure D-2**). The tank is double-walled, consisting of a primary tank that contains recovered gasoline inside a larger, secondary tank.

## D2.3 Description of Waste

Tank 406-R1A1 accumulates gasoline recovered from extracted vapor and groundwater. The recovered gasoline is generated from a groundwater remediation prioject located in the southeast quadrant of the LLNL Main Site.

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Technician are responsible for providing information and assistance in the event of an emergency. ES&H Team 4 is the support team for WRTS 406-R1.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

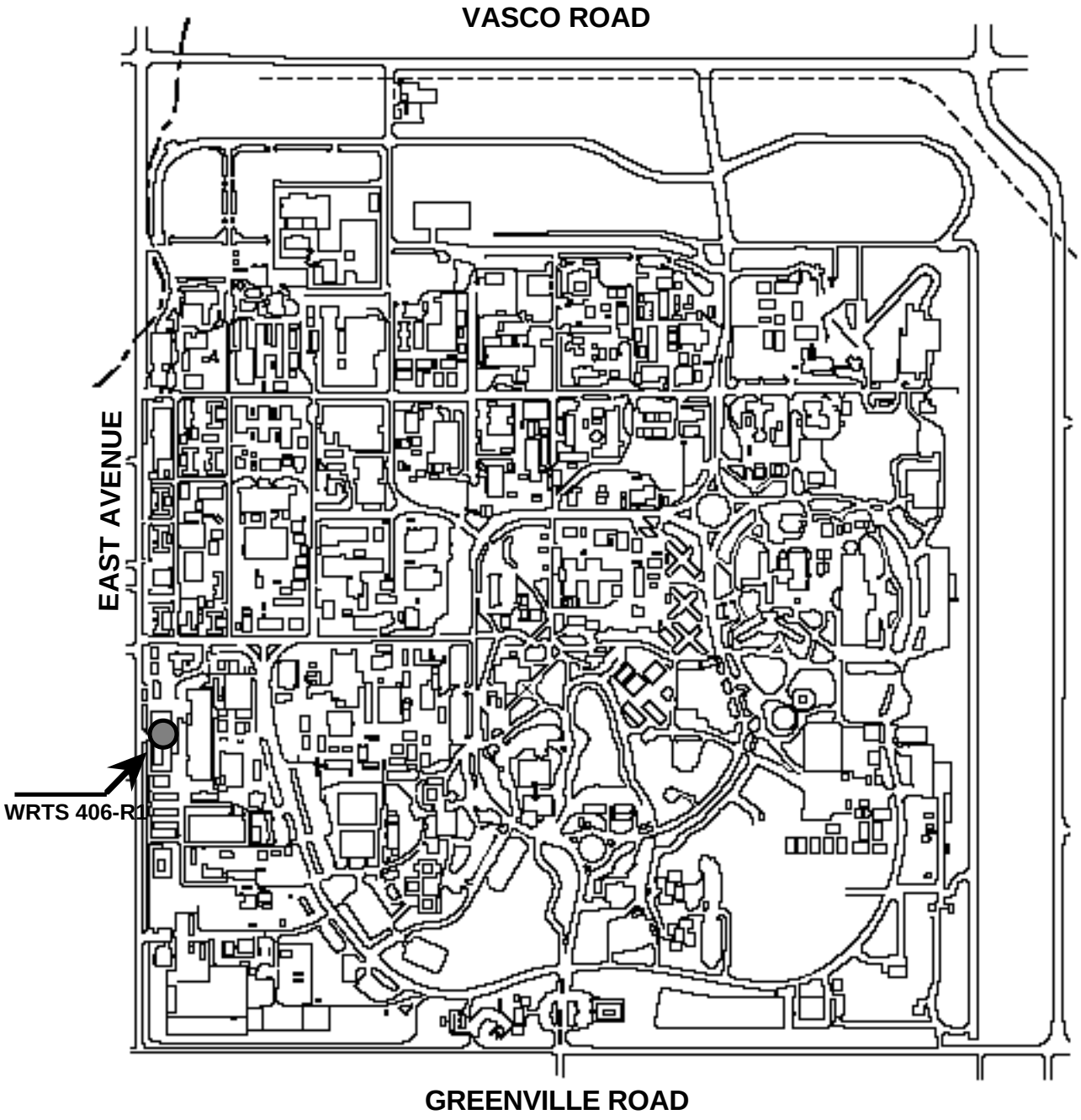



**Figure D-1. Location of WRTS 406-R1 at LLNL Main Site.**

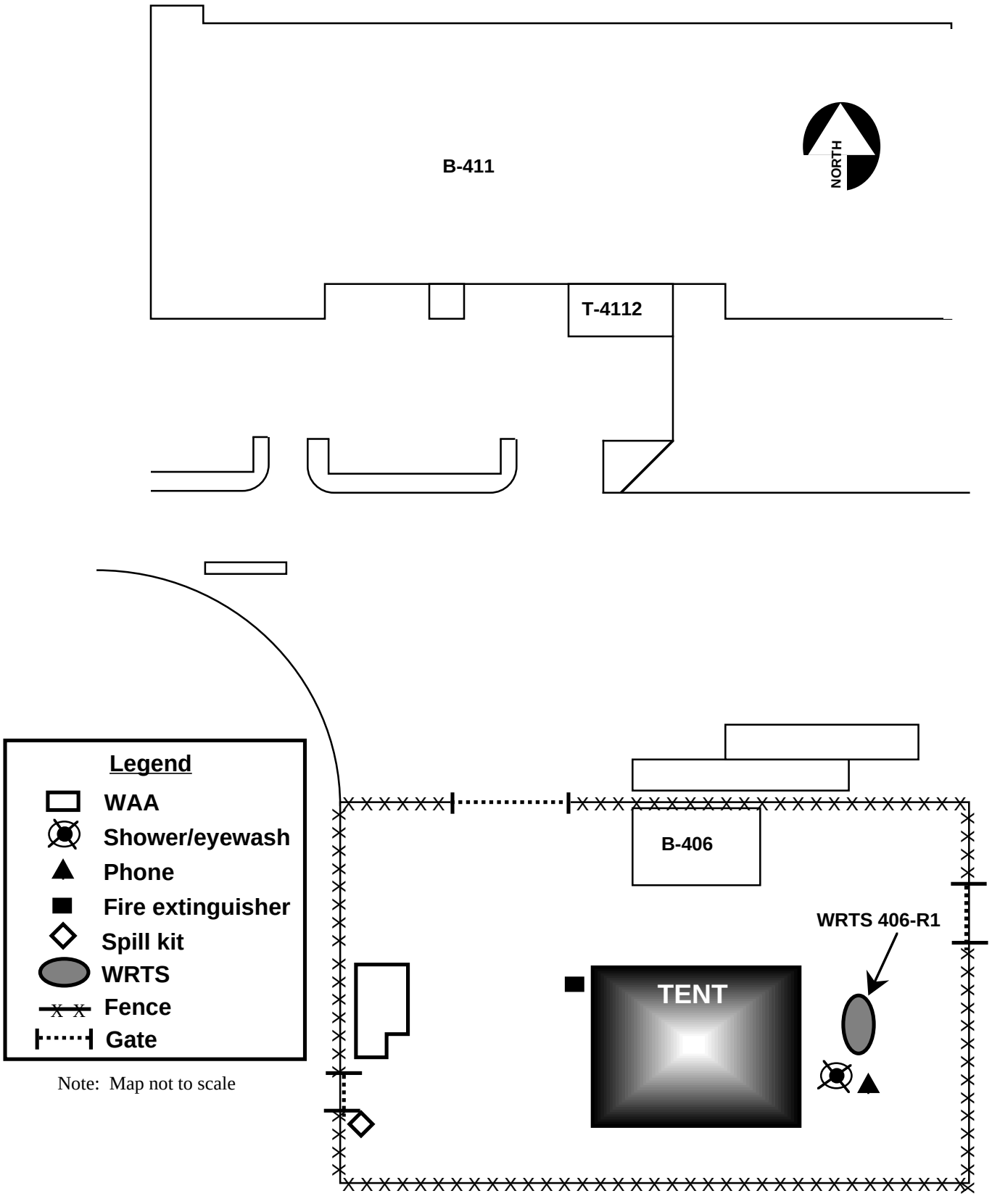



**Figure D-2. WRTS 406-R1 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Supervisor | Jerry Duarte | 423-2638 | 03180 |
| WRTS Operator | Dennis White | 424-4451 | 05158 |
| ES&H Team Leader | Steve Carr | 422-9915 | 04010 |
| TAGG Analyst | Sav Mancieri | 422-6920 | 04002 |
| EOG Analyst | Mo Bissani | 423-4299 | 80016 |
| HWM Technician | Russell Ratti | 423-1996 | 03696 |
| H&S Technician | Frank Gensheer | 424-4731 | 05446 |

*In an emergency, immediately notify the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 406-R1A1 are located at the Building 406 Waste Accumulation Area (WAA), which is west of WRTS 406-R1A1. A fire extinguisher is located adjacent to the WRTS, inside the 406 tent (on the west side). An emergency shower/eyewash is located next to the 406 WRTS. Material Safety Data Sheets (MSDSs) are available in the shop area of Building 406; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 406-R1A1 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

## D4.2 Communication Equipment

A telephone is located on the northwest side of the 406 WRTS. Most buildings in the area are also equipped with telephones.

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will affect leak detection and monitoring equipment. Once power resumes, the leak detection and monitoring systems will be tested following the guidelines in the WRTS 406-R1 Operational Plan. Power outages will have no adverse impact on system operations because the system is gravity fed.

**Table D-2. Spill Kit Supplies.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants.<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Spill kit cabinet at the Building 406 WAA |
| **Polyethylene bags** | 20 ea | Line drums and contain contaminated absorbent or other solid waste | Spill kit cabinet at the Building 406 WAA |
| **Broom** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Spill kit cabinet at the Building 406 WAA |
| **Shovel** | 1 ea | Scoop absorbent material for placement in waste containers | Spill kit cabinet at the Building 406 WAA |
| **Ratchet with 15/16-in. socket** | 1 ea | Remove or replace bolts from ring-top drums | Spill kit cabinet at the Building 406 WAA |
| **Gloves— Silvershield or 4-H gloves** | 2 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet at the Building 406 WAA |
| **Gloves— neoprene or nitrile** | 2 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet at the Building 406 WAA |
| **Chemically resistant protective coveralls (Chemrel or equivalent)** | 2 ea | See Appendix A, Personal Protective Equipment | Spill kit cabinet at the Building 406 WAA |
| **Boot covers— disposable polyvinyl chloride (PVC) or polyethylene** | 4 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet at the Building 406 WAA |
| **Face shields** | 2 ea | Protect against chemical splashes | Spill kit cabinet at the Building 406 WAA |
| **Safety goggles** | 2 ea | Protect against chemical splashes | Spill kit cabinet at the Building 406 WAA |
| **Tape— 2-in. duct** | 1 roll | Seal protective suits, gloves, and containers | Spill kit cabinet at the Building 406 WAA |
| **Tape— HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alerts personnel of hazard | Spill kit cabinet at the Building 406 WAA |
| **Marker— permanent, waterproof** | 1 ea | Label containers | Spill kit cabinet at the Building 406 WAA |
| **Wipes (Kimwipe or equivalent)** | 2 boxes | Absorb water, solvents, and oils | Spill kit cabinet at the Building 406 WAA |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eye wash** | 1 ea | Flush eyes for 15 min | Adjacent to the 406 WRTS, southwest corner of 406 WRTS |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | Adjacent to the 406 WRTS, southwest corner of 406 WRTS |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires; LLNL Fire Department must be called if a fire occurs | Adjacent to the 406 WRTS on the west side of the 406 tent |
| **55-gal drum** | 1 ea | Contain released waste and absorbent material | South side of the 406 WAA |

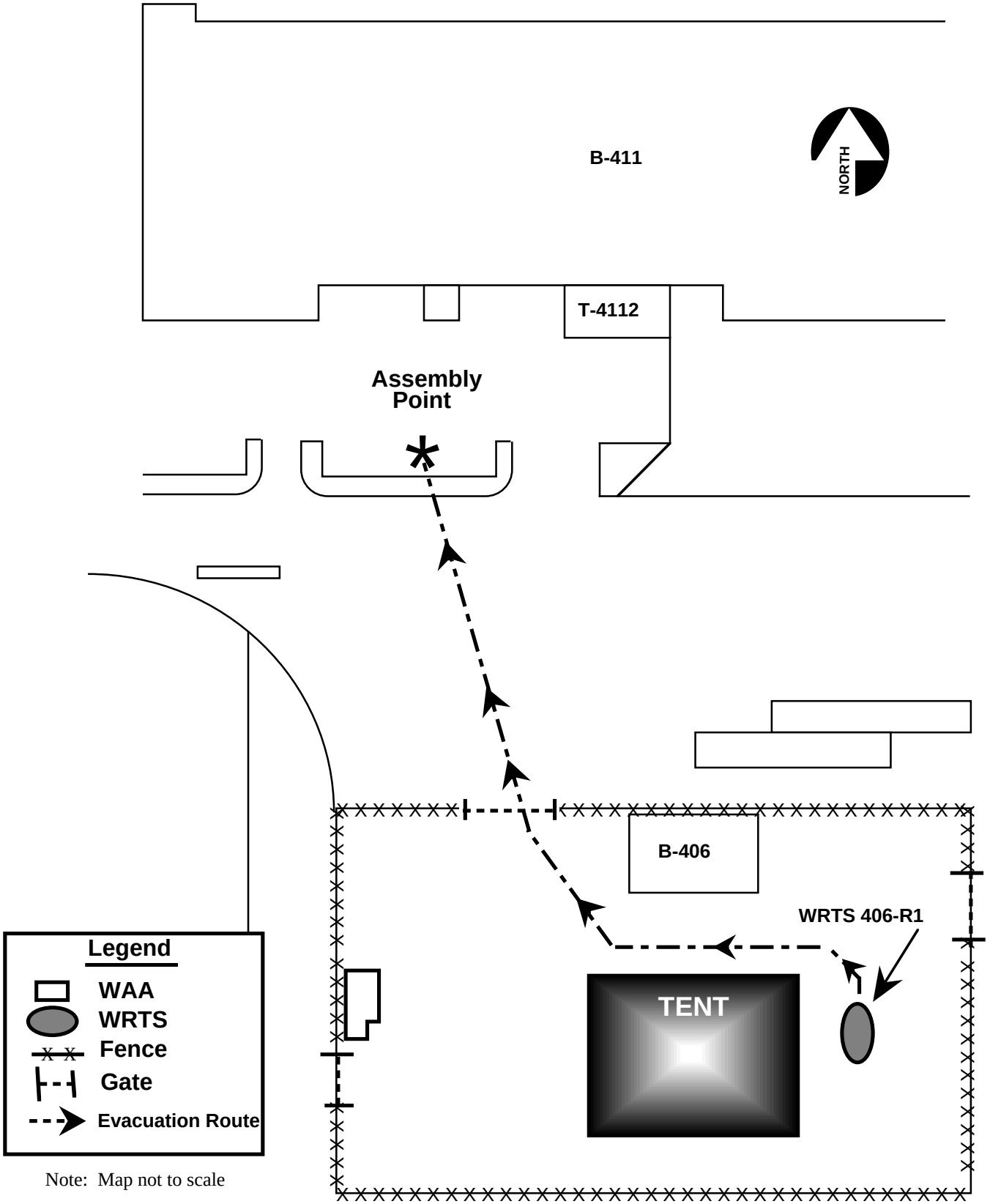
## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 406-R1 is to the northwest of Building 406. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located northwest of Building 406 and on the south side of Building 411 (see **Figure D-3**).




Note: Map not to scale

**Figure D-3. WRTS 406-R1 Evacuation Route.**

# APPENDIX D-5

# WASTE RETENTION TANK SYSTEM
# 490-R3

# APPENDIX D-5

# WASTE RETENTION TANK SYSTEM 490-R3

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-5**
D4.1 Emergency Equipment Available Near the WRTS ..... D-5
D4.2 Communication Equipment ..... D-6

**D5. EMERGENCY CONTROL PROCEDURES ..... D-7**
D5.1 Power Outages ..... D-7
D5.2 Equipment Failure ..... D-7

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-7**

### List of Figures

Figure D-1. Location of WRTS 490-R3 at LLNL Main Site ..... D-3
Figure D-2. WRTS 490-R3 Emergency Supplies ..... D-4
Figure D-3. WRTS 490-R3 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-5
Table D-3. Emergency Equipment ..... D-6

# APPENDIX D-5

# WASTE RETENTION TANK SYSTEM 490-R3

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank Systems (WRTS) 490-R3. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 490-R3 but applies to WRTSs in general is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 490 Waste Retention Tank System** |
| **Department/Program** | Lasers Program |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Bill Eickelberg<br>Lead Experimentor of B-490 Optics Refurbishment Area<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-463)<br>Livermore, CA 94551<br>Ph.: (510) 423-2411 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 490-R3 is located in the northeast quadrant of the LLNL Main Site (see **Figure D-1**), north of Building 490 (see **Figure D-2**). Hazardous waste generated from the rinsing of optics in the acetic acid baths can be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility located at Area 514 or 612.

## D2.2 Physical Description

WRTS 490-R3 consists of two, 180-gallon, stainless steel underground tanks, which are identified as 490-R3U1 and 490-R3U2 (see **Figure D-2**). The tanks have secondary containment, which consists of the primary tanks that contain the hazardous waste located in a stainless steel vault.

## D2.3 Description of Waste

Tanks 490-R3U1 and 490-R3U2 accumulate hazardous waste generated from the rinsing of optics from the acetic acid baths. The waste includes glacial acetic acid, deionized water, and small concentrations of copper (approximate pH of 4).

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Technician are responsible for providing information and assistance in the event of an emergency. ES&H Team 2 is the support team for 490-R3U1 and 490-R3U2.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

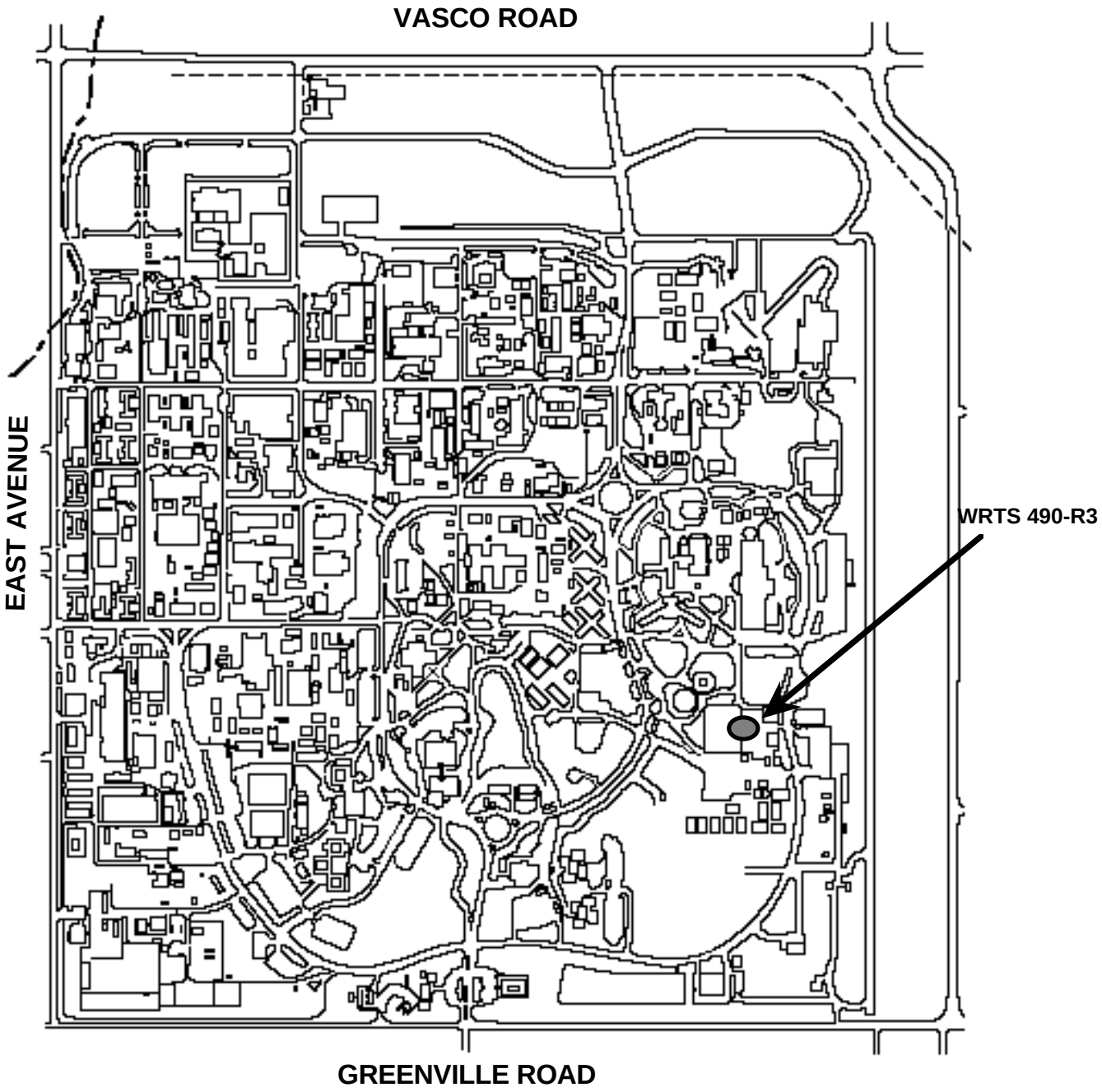
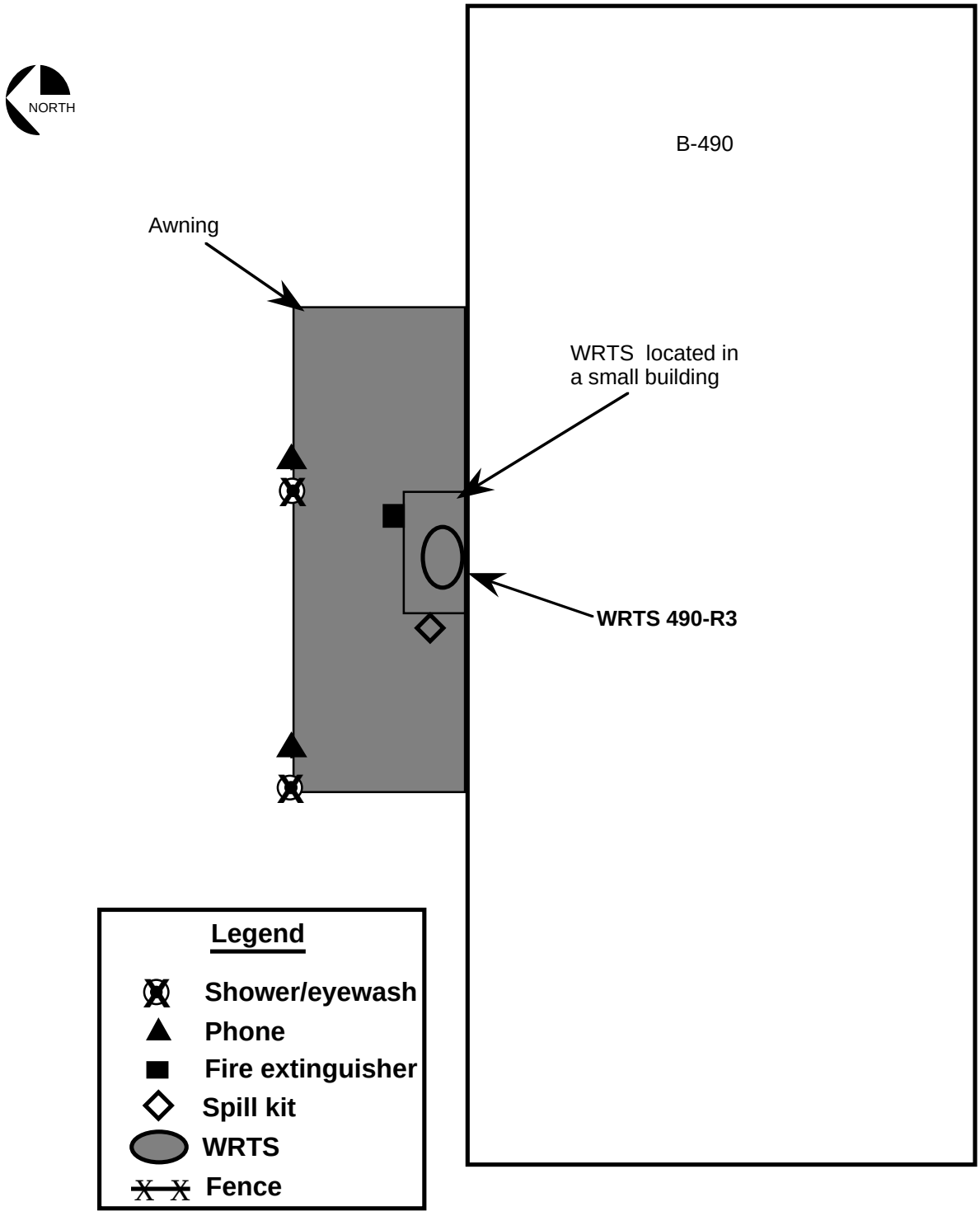



**Figure D-1. Location of WRTS 490-R3 at LLNL Main Site.**




**Note: Map not to scale**

**Figure D-2. WRTS 490-R3 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Operator | Bill Eickelberg | 423-2411 | 01276 |
| ES&H Team Leader | Mike Trent | 423-7183 | 04017 |
| TAGG Analyst | Sav Mancieri | 422-6920 | 04002 |
| EOG Analyst | Dawn Chase | 423-9136 | 04257 |
| HWM Technician | Kevin Gunn | 423-1996 | 01080 |
| H&S Technician | Mark Kaufeldt | 423-6397 | 05465 |

*In an emergency, immediately notify the LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 490-R3 are located outside of the shed on the west side of the tanks. A fire extinguisher is located on the north wall of the WRTS enclosure. An emergency shower/eyewash is located north of the WRTS on the concrete pad. A second emergency shower/eyewash is located northwest of the WRTS on the concrete pad. Material Safety Data Sheets (MSDSs) are available in Building 490, Room 1114A; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 490-R3 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

**Table D-2. Spill Kit Supplies.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Outside of the shed on the west side of the tanks |
| **Broom** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Outside of the shed on the west side of the tanks |
| **Dust pan** | 1 ea | Pick up waste absorbent material for placement in a waste container | Outside of the shed on the west side of the tanks |

**Table D-2. Spill Kit Supplies, Continued.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Gloves—nitrile** | 2 pairs | See Appendix A, Personal Protective Equipment | Outside of the shed on the west side of the tanks |
| **Chemically resistant protective coveralls (Long sleeve Sontara or Tyvek)** | 2 ea | See Appendix A, Personal Protective Equipment | Available from HWM Technician |
| **Boot covers—disposable polyvinyl chloride (PVC) or polyethylene** | 4 pairs | See Appendix A, Personal Protective Equipment | Available from HWM Technician |
| **Face shields** | 2 ea | Protect against chemical splashes | Available from HWM Technician |
| **Tape—HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alerts personnel of hazard | Outside of the shed on the west side of the tanks |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eye wash** | 1 ea | Flush eyes for 15 min | North of WRTS on concrete pad |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | North of WRTS on concrete pad |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires.;LLNL Fire Department must be called if a fire occurs | North side of WRTS enclosure |

## D4.2 Communication Equipment

A telephone is located on a post approximately 20 feet north of WRTS 490-R3. Building 490 and most other buildings in the area are also equipped with telephones.

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will affect leak detection, monitoring equipment, and tank pump out operations. Once power resumes, the leak detection and monitoring systems will be tested following the Operations Plan for the 490-R3 system. Power outages will have an adverse impact on system operations. The system is gravity fed and can be operated without complications until the tank becomes full. During a power outage the liquid level in the tank is not monitored and, if rinsewater continues to flow into the full tank, liquid will overflow into the secondary containment and remain undetected until power is restored to the monitoring system. Therefore, in the event of a power outage, personnel will discontinue discharging wastewater to the tank and will visually inspect the tank and secondary containment to ensure the waste has not overflowed. If it is necessary to pump out the tank during a power outage, the tanks can be pumped empty via HWM's mobile pumping services.

## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 490-R3 is from the north side of the WRTS. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located east of Building 490 (see **Figure D-3**).

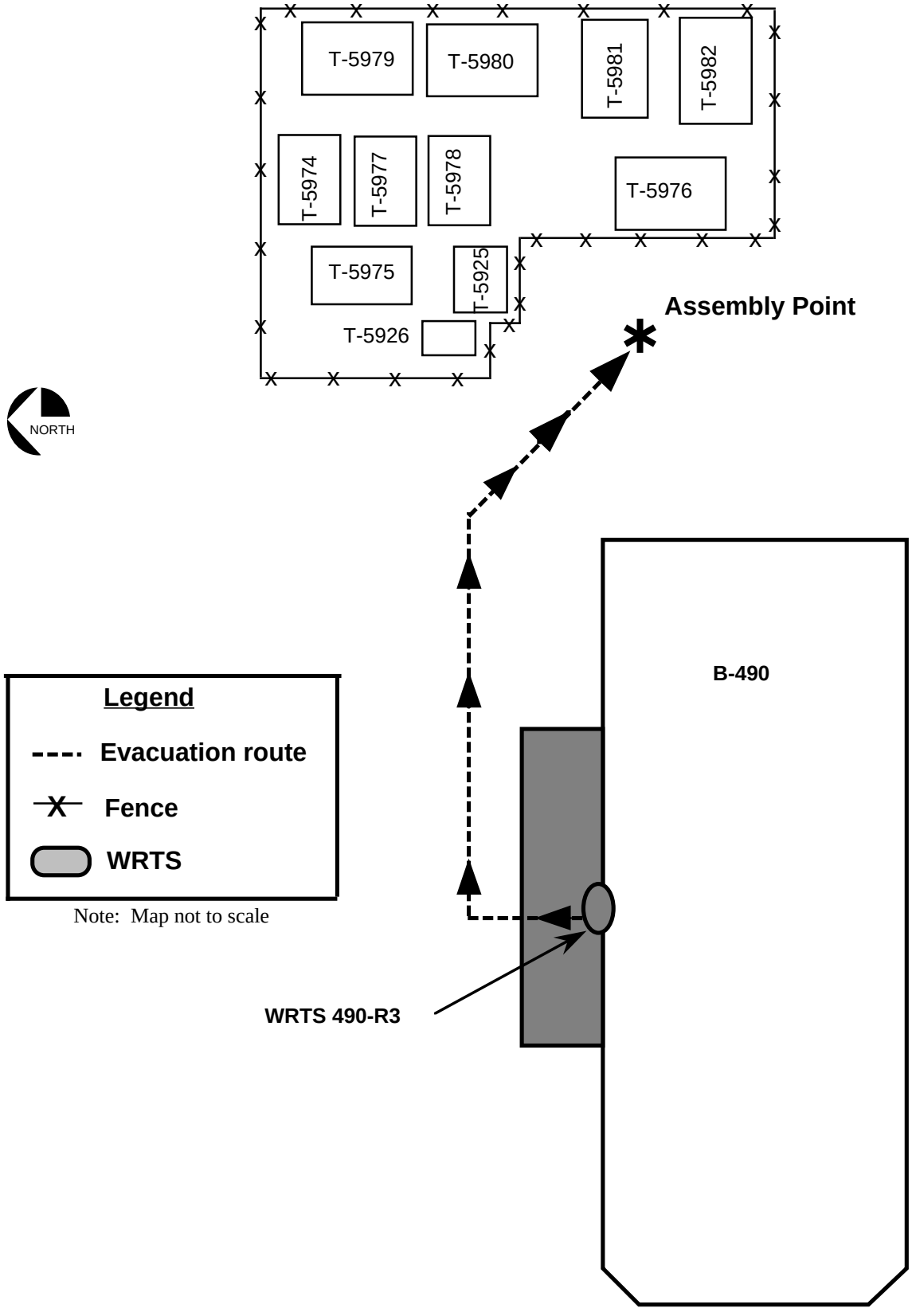



**Figure D-3. WRTS 490-R3 Evacuation Route.**

# APPENDIX D-6

# WASTE RETENTION TANK SYSTEM
# 611-O1

# APPENDIX D-6

# WASTE RETENTION TANK SYSTEM 611-O1

## Contents

**D1. INTRODUCTION ..... D-1**
D1.1 General Information ..... D-1

**D2. WRTS DESCRIPTION ..... D-2**
D2.1 General Information ..... D-2
D2.2 Physical Description ..... D-2
D2.3 Description of Waste ..... D-2

**D3. RESPONSIBILITIES ..... D-2**

**D4. EMERGENCY EQUIPMENT ..... D-5**
D4.1 Emergency Equipment Available Near the WRTS ..... D-5
D4.2 Communication Equipment ..... D-6

**D5. EMERGENCY CONTROL PROCEDURES ..... D-7**
D5.1 Power Outages ..... D-7
D5.2 Equipment Failure ..... D-7

**D6. EVACUATION ROUTE AND ASSEMBLY POINT ..... D-7**

### List of Figures

Figure D-1. Location of WRTS 611-01 at LLNL Main Site ..... D-3
Figure D-2. WRTS 611-01 Emergency Supplies ..... D-4
Figure D-3. WRTS 611-01 Evacuation Route ..... D-8

### List of Tables

Table D-1. Program/Department Contacts and ES&H Team Contacts ..... D-5
Table D-2. Spill Kit Supplies ..... D-5
Table D-3. Emergency Equipment ..... D-6

# APPENDIX D-6

# WASTE RETENTION TANK SYSTEM 611-O1

## D1. INTRODUCTION

This appendix is designed to provide information specific to Waste Retention Tank Systems (WRTS) 611-O1. The appendix is not designed to be used as a sole source of information. All general information that is not specific to WRTS 611-O1 but applies to WRTSs in general is included in the General Plan.

## D1.1 General Information

| | |
|---|---|
| **Facility Name** | **Building 611 Waste Retention Tank System** |
| **Department/Program** | Services and Distribution Department |
| **Site Operator** | Regents, University of California<br>Lawrence Livermore National Laboratory (LLNL)<br>P.O. Box 808<br>Livermore, CA 94551 |
| **EPA ID No.** | CA2890012584 |
| **Location** | 7000 East Avenue<br>Livermore, CA 94551 |
| **Contact** | Beverlee Morales<br>Waste Retention Tank System Operator<br>Lawrence Livermore National Laboratory<br>P.O. Box 808 (L-695)<br>Livermore, CA 94551<br>Ph.: (510) 423-2177 |
| **Owner** | U.S. Department of Energy<br>Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208 |
| **Contact** | James T. Davis<br>Assistant Manager for Environmental Management and Support<br>Department of Energy, Oakland Operations Office<br>1301 Clay Street, Suite 700N<br>Oakland, CA 94612-5208<br>Ph.: (510) 637-1587 |

# D2. WRTS DESCRIPTION

## D2.1 General Information

WRTS 611-O1 is located in the southeast quadrant of the LLNL Main Site (see **Figure D-1**), west of Building 611 (see **Figure D-2**). Waste oil may be accumulated in the WRTS for 90 days or less until it is transferred to the appropriate Hazardous Waste Management (HWM) Facility, located at Area 514 or 612.

## D2.2 Physical Description

WRTS 611-O1 consists of a 1,000-gallon, fiberglass underground tank, which is identified as 611-O1U1 (see **Figure D-2**). The tank is double-walled, consisting of a primary tank that contains the waste oil inside a larger, secondary tank. The secondary tank is filled with water and is connected through piping to the above grade water reservoir box, located on the south wall of Building 611, Room 1125. A liquid level indicator is located in the water reservoir box. The piping is also secondarily contained. The secondary piping is connected to a manway riser and is not monitored by the leak alert system. The fill point for the tank is located inside of Building 611 near the southeast corner.

## D2.3 Description of Waste

Tank 611-O1U1 accumulates waste oil only. The waste oil is generated from the motor pool where vehicle oil changes are performed.

# D3. RESPONSIBILITIES

The WRTS Operator; Environmental, Safety, and Health (ES&H) Team Leader; Tank Assessment and Guidance Group (TAGG) Analyst; Environmental Operations Group (EOG) Analyst; HWM Technician; and Health and Safety (H&S) Technician are responsible for providing information and assistance in the event of an emergency. ES&H Team 4 is the support team for WRTS 611-O1.

If additional support members are needed, the ES&H Team Leader or EOG Analyst will notify those members. Program/department contacts and ES&H Team contacts are listed in **Table D-1**.

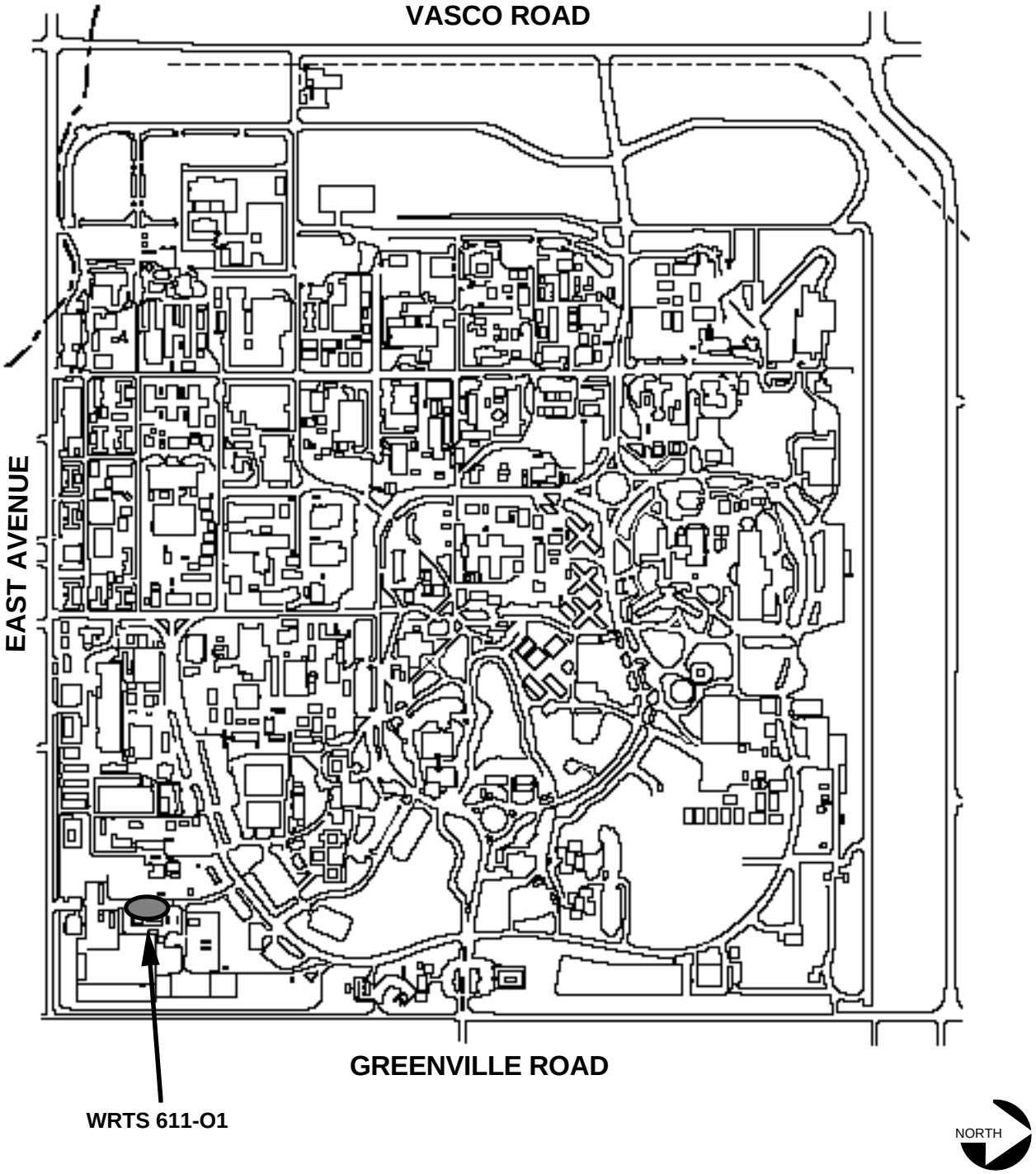
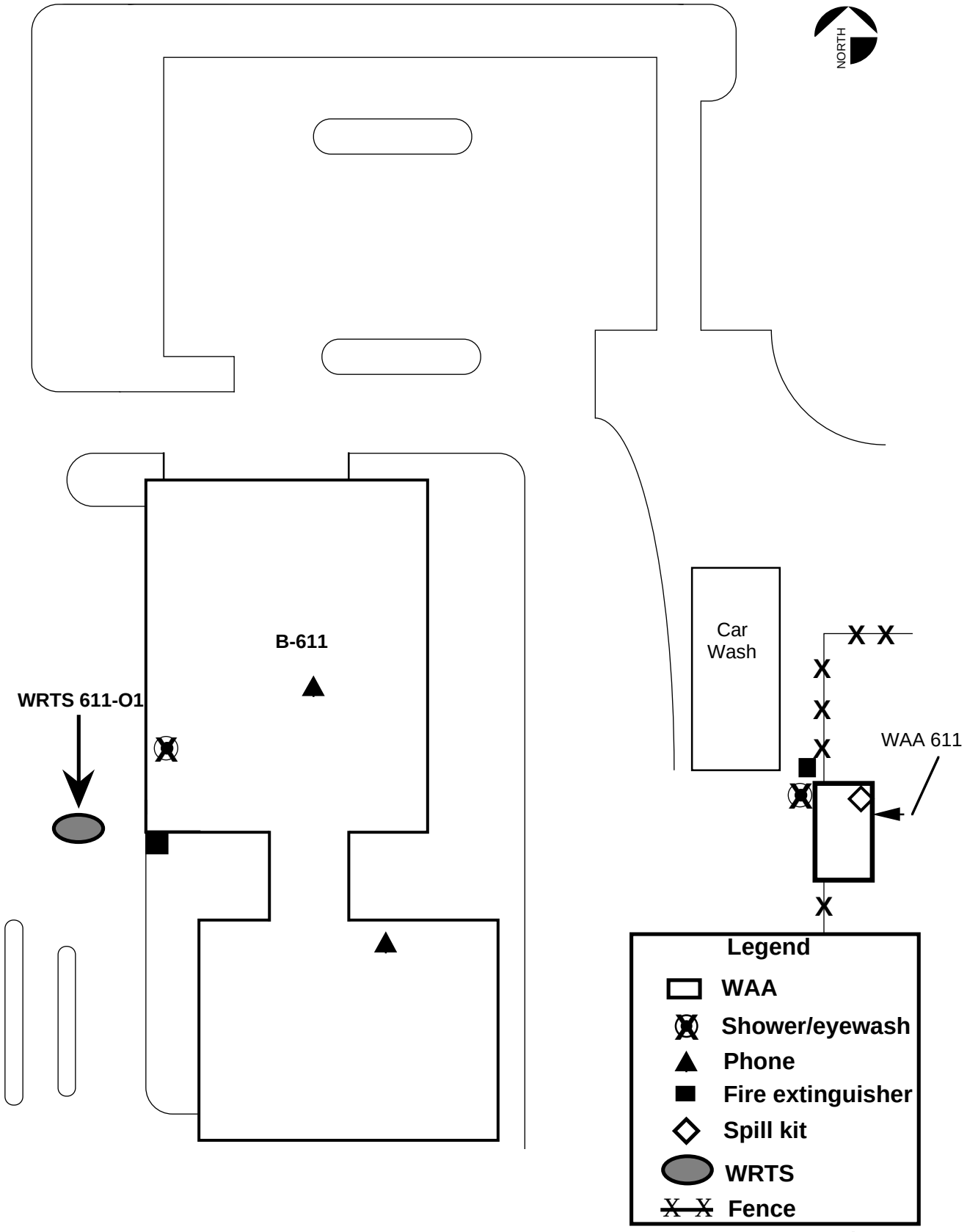



**Figure D-1. Location of WRTS 611-O1 at LLNL Main Site.**




Note: Map not to scale

**Figure D-2. WRTS 611-O1 Emergency Supplies.**

**Table D-1. Program/Department Contacts and ES&H Team Contacts.**

| Contact | Name | Phone | Pager |
|---|---|---|---|
| WRTS Operator | Beverlee Morales | 423-7481 | 02838 |
| ES&H Team Leader | Steve Carr | 422-9915 | 04010 |
| TAGG Analyst | Sav Mancieri | 422-6920 | 04002 |
| EOG Analyst | Mo Bissani | 423-4299 | 80016 |
| HWM Technician | Russell Ratti | 423-1996 | 03696 |
| H&S Technician | Lloyd Smith | 422-8349 | 05441 |

*In an emergency, immediately notify he LLNL Emergency Dispatcher at extension 911 or dial 422-7595 if calling from off-site, cellular phone, or pay phone. If paging from off-site, cellular phone, or pay phone, dial 423-7705 and pager number.*

# D4. EMERGENCY EQUIPMENT

## D4.1 Emergency Equipment Available Near the WRTS

Spill kit supplies and personal protective equipment for WRTS 611-O1 are located in the Building 611 Waste Accumulation Area (WAA) on the east side of Building 611. A fire extinguisher is located near the WRTS on the west wall of Building 611. An emergency shower/eyewash is located next to the WAA. Material Safety Data Sheets (MSDSs) are available in the shop area of Building 611; they provide general information on chemical hazards and personal protective equipment needed to manage chemicals. MSDSs may indicate the emergency actions to be taken if personnel come in contact with the chemical. The location, type, and quantity of spill kit supplies immediately available for the operation of WRTS 611-O1 are listed in **Table D-2**. Other emergency equipment in this area is listed in **Table D-3**. The location of emergency equipment is shown in **Figure D-2**.

**Table D-2. Spill Kit Supplies.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Dry Sorb absorbent (silicate) or equivalent** | 50 lb | Contain and absorb concentrated acids, bases, solvents, oils, hydraulic fluids, polychlorinated biphenyls (PCBs), organic solvents, and coolants.<br>***NOT FOR USE ON HYDROFLUORIC ACID*** | Spill kit cabinet in the Building 611 WAA |
| **Polyethylene bags** | 20 ea | Line drums and contain contaminated absorbent or other solid waste | Spill kit cabinet in the Building 611 WAA |
| **Broom** | 1 ea | Sweep absorbent material for ultimate placement in a waste container | Spill kit cabinet in the Building 611 WAA |

**Table D-2. Spill Kit Supplies, Continued.**

| Supplies | Quantity | Use | Location |
|---|---|---|---|
| **Shovel** | 1 ea | Scoop absorbent material for placement in waste containers | Spill kit cabinet in the Building 611 WAA |
| **Ratchet with 15/16-in. socket** | 1 ea | Remove or replace bolts from ring-top drums | Spill kit cabinet in the Building 611 WAA |
| **Gloves—Silvershield or 4-H gloves** | 2 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 611 WAA |
| **Gloves— neoprene or nitrile** | 2 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 611 WAA |
| **Chemically resistant protective coveralls (Chemrel or equivalent)** | 2 ea | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 611 WAA |
| **Boot covers—disposable polyvinyl chloride (PVC) or polyethylene** | 4 pairs | See Appendix A, Personal Protective Equipment | Spill kit cabinet in the Building 611 WAA |
| **Face shields** | 2 ea | Protect against chemical splashes | Spill kit cabinet in the Building 611 WAA |
| **Safety goggles** | 2 ea | Protect against chemical splashes | Spill kit cabinet in the Building 611 WAA |
| **Tape—2-in. duct** | 1 roll | Seal protective suits, gloves, and containers | Spill kit cabinet in the Building 611 WAA |
| **Tape—HAZARDOUS WASTE AREA** | 1 roll | Cordon off incident area and alerts personnel of hazard | Spill kit cabinet in the Building 611 WAA |
| **Marker—permanent, waterproof** | 1 ea | Label containers | Spill kit cabinet in the Building 611 WAA |
| **Wipes (Kimwipe or equivalent)** | 2 boxes | Absorb water, solvents, and oils | Spill kit cabinet in the Building 611 WAA |

**Table D-3. Emergency Equipment.**

| Equipment | Quantity | Use | Location |
|---|---|---|---|
| **Eye wash** | 1 ea | Flush eyes for 15 min | Outside of B-611 WAA near northwest corner |
| **Deluge shower** | 1 ea | Flush exposed area for 15 min | Outside of B-611 WAA near northwest corner |
| **Type ABC fire extinguisher** | 1 ea | Extinguish or control small electrical or flammable liquids fires. LLNL Fire Department must be called if a fire occurs | Outside of B-611 on west wall |
| **55-gal drum** | 1 ea | Contain released waste and absorbent material | South side of B-611 WAA |

## D4.2 Communication Equipment

A telephone is located inside of Building 611 in Room 1060. Most buildings in the area are also equipped with telephones.

# D5. EMERGENCY CONTROL PROCEDURES

## D5.1 Power Outages

Power outages will effect leak detection and monitoring equipment. Once power resumes, the leak detection and monitoring systems will be tested following the guidelines in the *Monitoring Program for New Underground Storage Tanks 611-G1U1, 611-G2U1, 611-D1U1, and 611-O1U1* (March 1992). Power outages will have no adverse impact on system operations because the system is gravity fed.

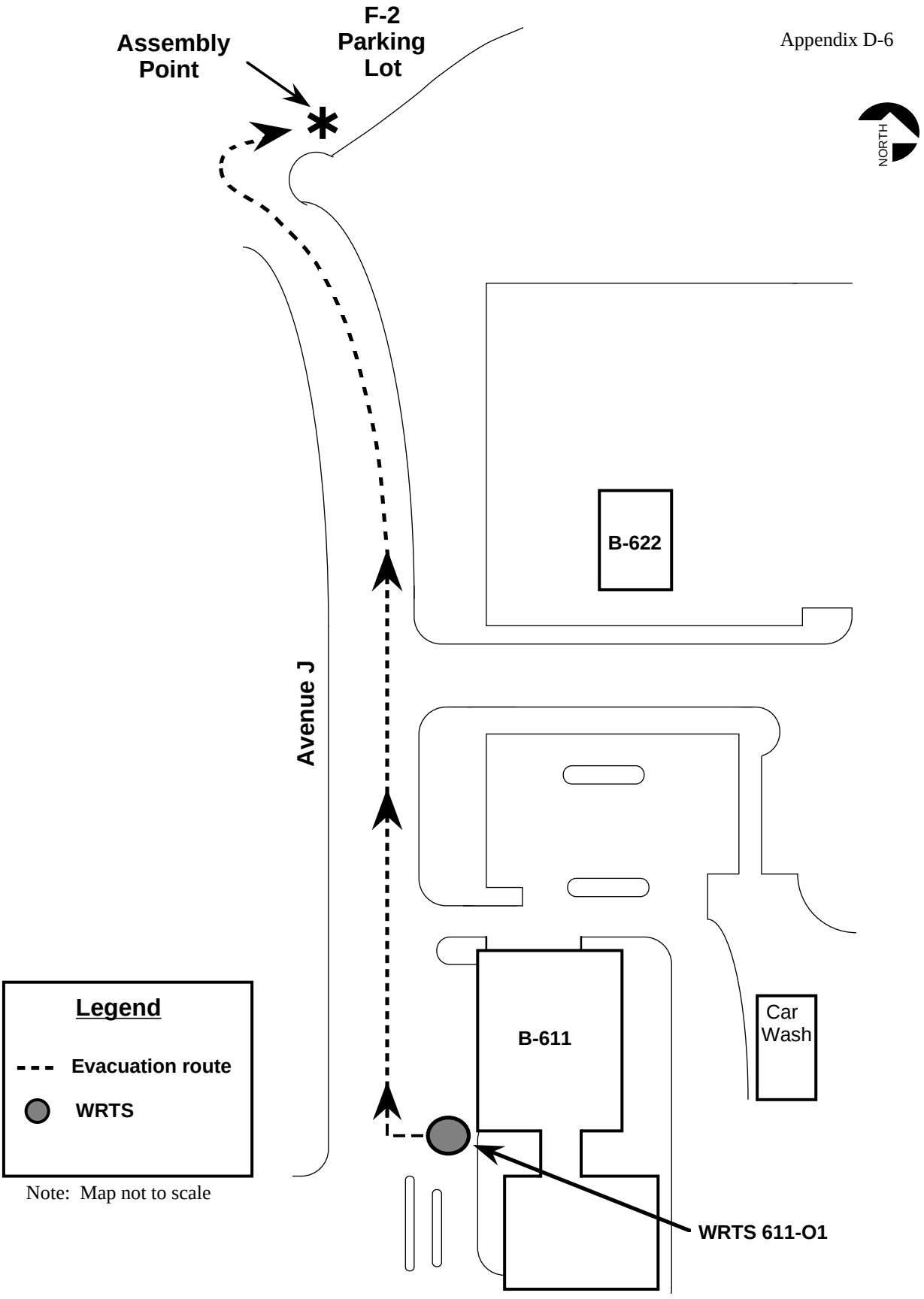
## D5.2 Equipment Failure

Equipment failure (e.g., ruptured pipe or leaking valve) could result in a release of waste from the WRTS. If a release occurs, follow the procedures for responding to a waste release in Section 4.2.4 of the General Plan.

# D6. EVACUATION ROUTE AND ASSEMBLY POINT

Evacuation from WRTS 611-O1 is from the west side of Building 611. See **Figure D-3** for the location of the evacuation route and assembly point.

After evacuation, personnel should gather at the assembly point located northwest of Building 622 (see **Figure D-3**).




Note: Map not to scale

**Figure D-3. WRTS 611-O1 Evacuation Route.**

*Technical Information Department* • Lawrence Livermore National Laboratory
University of California • Livermore, California 94551